



PARTS MANUAL

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00-00

REV.

LS190

LinkOne Parts Manual



LS190

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 00-00

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

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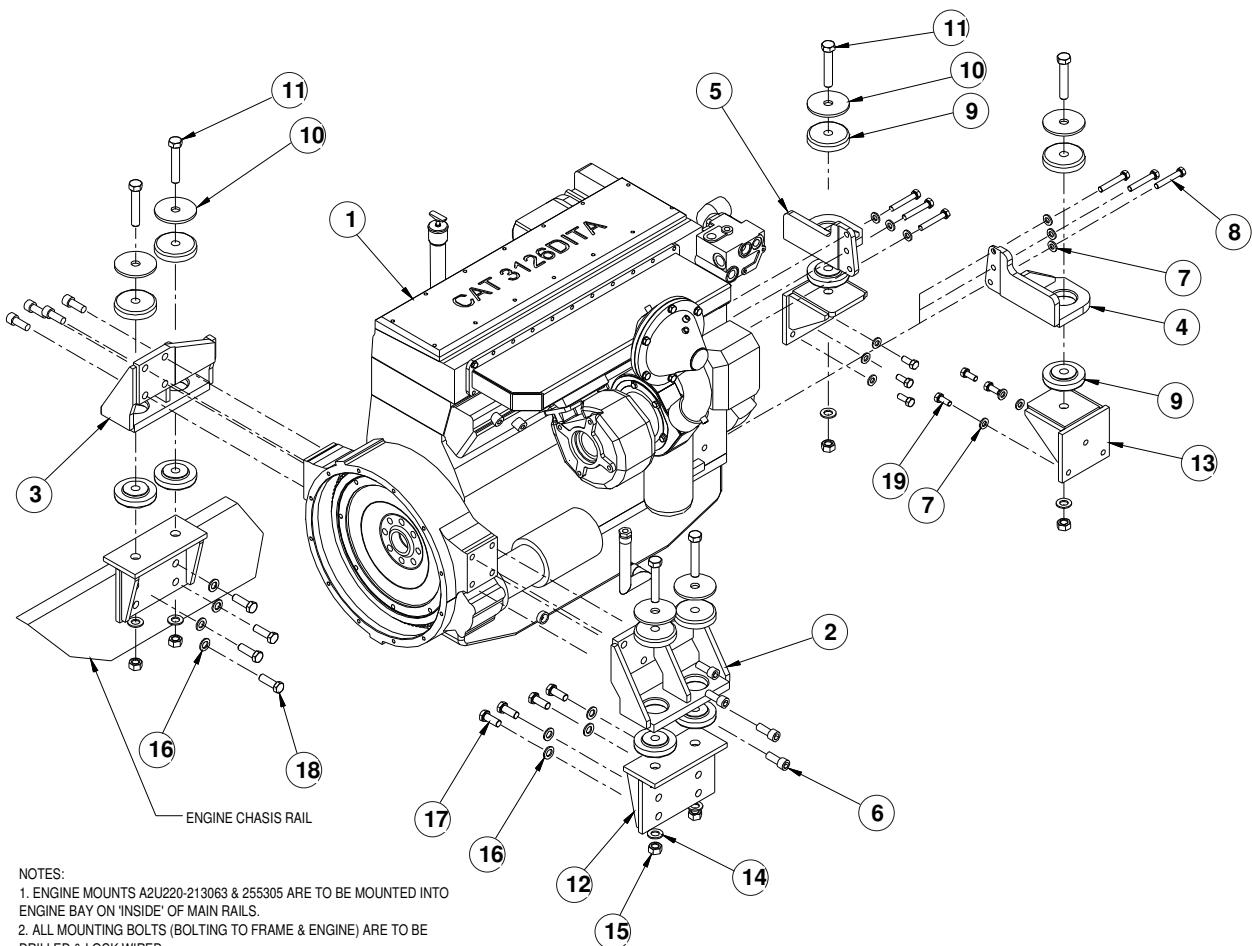
00-00

REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
2-00				POWER UNIT
3-00				DRIVE TRAIN
4-00				FRAME RELATED
5-00				HYDRAULIC SYSTEM
6-00				AIR SYSTEM
7-00				ELECTRICAL SYSTEM
8-00				ATTACHMENTS & ACCESSORIES

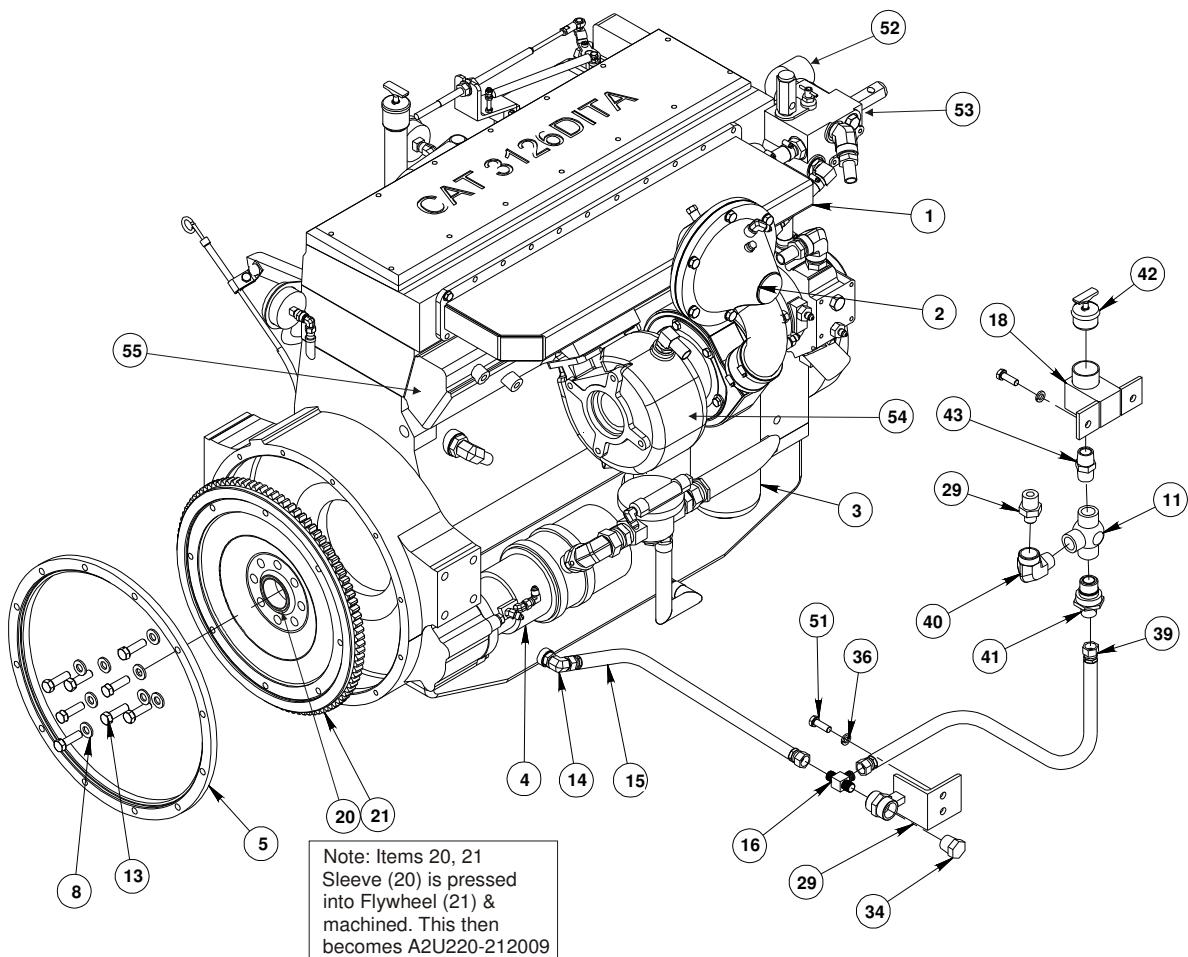
**POWER UNIT****02-00****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	A2U220-210042	02-01		ENGINE MOUNTING GROUP
	A2U220-250111	02-02		EXHAUST GROUP, WITH PARTICULATE FILTER, LS190
	A2U220-250108	02-03		MAKEUP TANK GROUP, 275L
	A2U220-230046	02-04		FUEL TANK GROUP, ED10
	A2U220-260058	02-05		ENGINE COOLING GROUP
	A2U900-210056	02-06		REMOTE OIL FILTER GROUP ED10/ED7/ED7LP/ED6
	A2U220-430031	02-07		PEDAL GROUP, FIXED THROTTLE
	A2U220-230048	02-08		FUEL LINES GROUP
	A2U220-240058	02-10		AIR INTAKE GROUP ED10
	A2U220-240076	02-10		AIR INTAKE - SHUT DOWN GROUP, ED10 + STRANGLER
	A2U220-290029	02-11		TURBO ACCUMULATOR GROUP
	BD00009809	02-13		EXHST SUPPORT BRKT KIT LS170/ 190/ TS490/ TS490L
	BD00013762	02-17		TURBO ASSEMBLY KIT
	BD00015384	02-18		FILLER CAP - NECK ASSY. REPLACEMENT KIT (M.U. TANK)
	Filter_Kit_ED10	02-40		ED10 MAINTENANCE FILTER KIT  Product documentation updates  Sandvik may issue Technical, Safety, Parts or other Bulletins to update information relating to this product. These Bulletins will be forwarded to the known owner of the equipment.  All Bulletins issued by Sandvik Underground Mining Flameproof Equipment are available on the Sandvik website at <a href="http://www.miningandconstruction.sandvik.com/au">www.miningandconstruction.sandvik.com/au</a> (via EHS tab). Sandvik recommends that this site is checked periodically for new releases.

**A2U220-210042**
**ENGINE MOUNTING GROUP**
**02-01**
**REV. 1**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 02-01**
**Sandvik Underground Mining Flameproof Equipment**

**A2U220-210042****ENGINE MOUNTING GROUP****02-01****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-211044-2	02-01-04	1	ENGINE, MODIFIED, CAT 3126TA
2	A2U220-213059		1	ENGINE MOUNT, REAR D.S.
3	A2U220-213060		1	ENGINE MOUNT REAR O.D.S.
4	A2U220-213061		1	ENGINE MOUNT, FRONT D.S.
5	A2U220-213062		1	ENGINE MOUNT, FRONT, O.D.S.
6	445210937		8	S.H.C.S. M16 x40 LG
7			12	WASHER, FLAT M12
8			6	BOLT, HEX HD M12 x 75 LG
9	106-03455		12	MOUNTING, CENTRE BONDED
10	65083507		6	WASHER, MOUNT
11	445402939			BOLT, HEX HD M18 x 100 LG
12	255305		2	MOUNT, REAR
13	A2U220-213063		2	MOUNT, FRONT
14			6	WASHER, FLAT M18
15			6	NUT, NYLOC M18
16			8	WASHER, FLAT M16
17	445502937		4	BOLT, HEX HD M16 x 40 LG
18	445402939		4	BOLT, HEX HD M16 x 50 LG
19	445502843		6	BOLT, HEX HD M12 x 30 LG

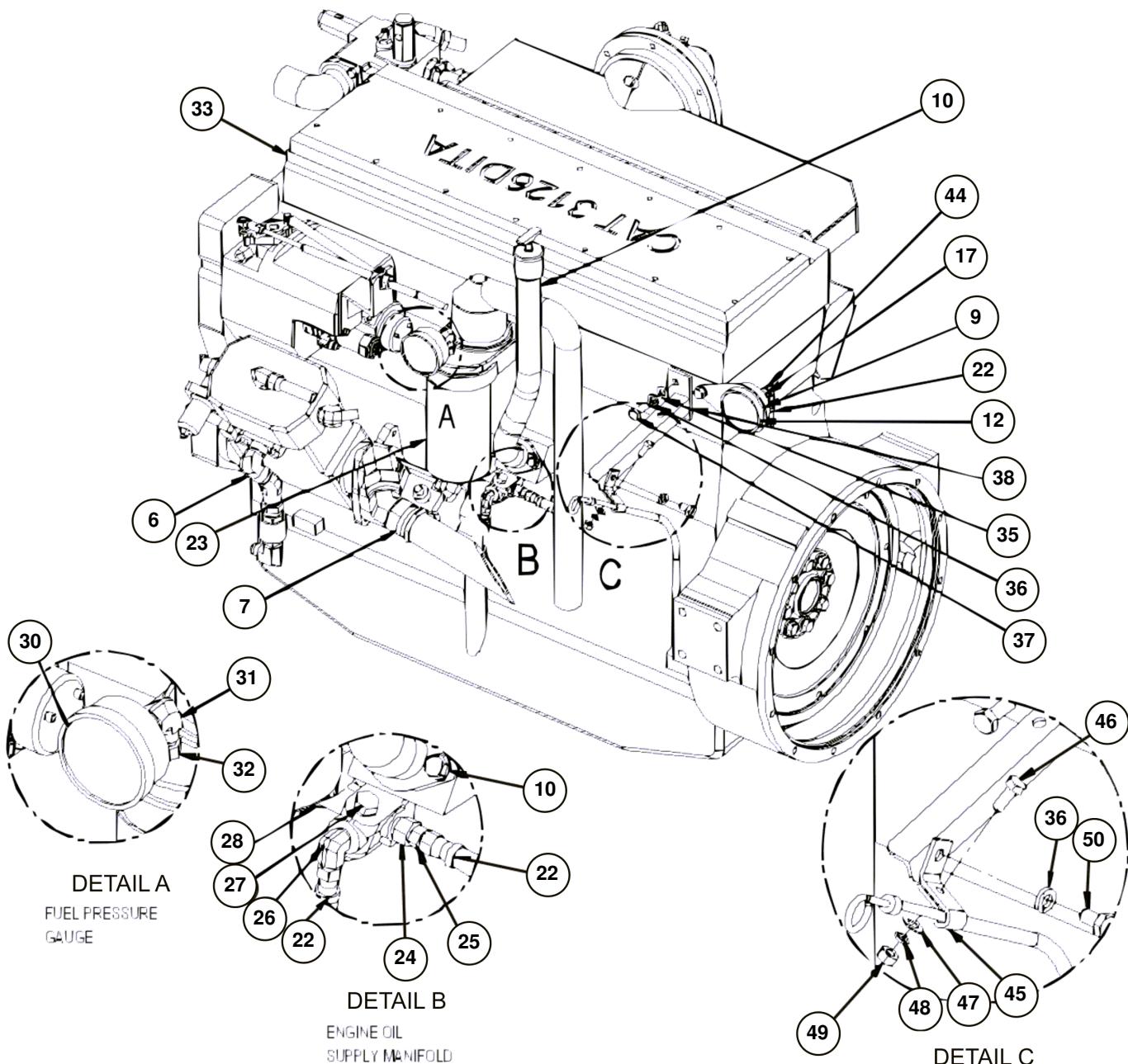
**A2U220-211044  
REV. 2****ENGINE, MODIFIED, CAT 3126TA****02-01-01****PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION 02-01-01**

Sandvik Underground Mining Flameproof Equipment

A2U220-211044  
REV. 2

ENGINE, MODIFIED, CAT 3126TA

02-01-01



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-01-01**

Sandvik Underground Mining Flameproof Equipment

**A2U220-211044**
**ENGINE, MODIFIED, CAT 3126TA**
**02-01-01**
**REV. 2**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	A2U220-241090		1	AFTERCooler / Flametrap HSG
2	A2U220-241042		1	Cover, Inlet Flametrap
3	C2A1R0716		1	Oil Filter
4	A2U220-670033		1	Air Starter Group
5	A2U220-212014		1	Spacer (Modified)
6	A2U220-610011		1	Air Compressor Group
7	A2U220-510038		1	Pump & Mounting Group
8	C2A5P8245		1	Washer, Flat M12
9	AFP1008-20		1	Bracket, Oil Pressure Gauge
10	A2U220-294006		1	Oil Tube Assembly
11	D71-121212		1	TEE Piece NPT 3/4" - NPT 3/4" - NPT 3/4", F/F/F
12	64119919		1	Oil Pressure Gauge
13	C2A7X3344		1	Bolt, Hex HD M12 x 40 LG
14	D53-1212		1	Elbow 90 Deg Uno_Ring 3/4" - JIC 3/4", M/M
15	D2900-12-110-17		2	Hydraulic Hose 1/2" x 12 JIC
16	D74-121717		1	TEE Piece
17	D67-2		1	Socket NPT 1/8"
18	A2U220-291247		1	Bracket, Engine Oil Fill
19	A2U220-291243		1	Bracket, Quick Fill
20	C2A4W-7594		1	Sleeve (Stock, before machining)
21	A2U220-212015		1	Flywheel & Sleeve Complete (machined)
22	D605-74		3	Hose Assembly, Push On
23	C2A1R0751		1	Fuel Filter, Secondary
24	A2U220-294003		1	Restrictor
25	D15-0207		1	Nipple NPT 1/8" - JIC 7/16"
26	D17-47		1	Elbow 90 Deg NPT 1/4" - JIC 7/16", M/M
27	D60-4		1	Plug NPT 1/4"
28	C2A4P5153		1	Manifold, Oil
29	D15-1217		1	Nipple NPT 3/4" - JIC 1.1/16"
30	A2U220-472051		1	Gauge, Fuel Pressure
31	D38-44		1	Elbow 90 Deg NPT 1/4" - NPT 1/4", F/F
32	CN3-0904		1	Nipple Uno_Ring - NPT
33	C2A4W8661		1	Inlet Manifold
34	D60-12		1	Plug NPT 3/4"

**A2U220-211044****ENGINE, MODIFIED, CAT 3126TA****02-01-01****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
35	450062508		2	WASHER, FLAT M10
36	450081022		7	WASHER, SPRING M10
37	445502801		2	BOLT, HEX HD M10 x 25 LG
38	A2U220-291248		1	DIPSTICK MOUNTING GROUP
39	D2900-12-50-17		2	HYDRAULIC HOSE 1/2" x 12 -JIC
40	D37-1212		1	ELBOW 90 DEG NPT 3/4" - NPT 3/4", M/F
41	A2U900-293002		1	BANLAW FITTING NPT 3/4"
42	C2A5L2952		1	FILLER CAP
43	DA4-1212		1	NIPPLE NPT 3/4" - NPT 3/4"
44	D17-27		1	ELBOW 90 DEG NPT 1/8" - JIC 7/16", M/M
45	C2A7C0874		1	DIPSTICK CLIP
46	445502759		1	BOLT, HEX HD M8 x 20 LG
47	450061617		1	WASHER, FLAT M8
48	450081120		1	WASHER, SPRING M8
49	455309030		1	NUT, HEX M8
50	445502795		1	BOLT, HEX HD M10 x 16 LG
51	445502802		4	BOLT, HEX HD M10 x 30 LG
52	A2U220-265112		1	MODIFIED ELBOW
53	A2U220-265114		1	THERMOSTAT HOUSING MODIFIED
54	A2U220-259009	02-01-02-09	1	TURBO MO0DIFIED
55	BD00012861		1	EXHAUST MANIFOLD
56	A2U220-211043-0	02-01-01-01	1	Engine, CAT 3126TA (REF. ONLY NOT SOLD SEPARATELY)

**A2U220-211043**
**ENGINE GROUP**
**02-01-02-04**
**REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
				ENGINE GROUP
				ENGINE SPEC'S & COMPONENT PART NUMBERS
				INDUSTRIAL ENGINE CATERPILLAR 3126DITA
				230 HP (175 kW) (w/o fan) @2600 RPM (Factory setting)
				MECHANICAL GOVERNOR
				INDUSTRIAL INTERMITTENT C RATING
				BASIC ENGINE WITH WET EXHAUST MANIFOLD & TURBO
C2A1393317				BREATHER GROUP
C2A1208971				CAMSHAFT GROUP
C2A1085759				CONTROL GROUP, FUEL INJECTION
C2A1051695				CRANKSHAFT GROUP
C2A1136087				CYLINDER BLOCK GROUP, S/N: 9ZR979-UP
C2A1291165				CYLINDER HEAD GROUP
C2A1407370				FASTENER GROUP, FUEL INJECTION PUMP
C2A7W4812				FUMES DISPOSAL GROUP
C2A7W8420				GEAR GROUP, FRONT
C2A1154175				HOUSING GROUP, FRONT
C2A1323585				LIFTING GROUP, ENGINE
C2A1173432				LINES GROUP, FUEL RATIO CONTROL
C2A1077731				LINES GROUP, GOVERNOR OIL
C2A7W8434				MANIFOLD GROUP, EXHAUST
C2A7C6373				MANIFOLD GROUP, INLET
C2A1323527				MECHANISM GROUP, FUEL PUMP & VALVE
C2A4P4372				PISTON & ROD GROUP, S/N: 9ZR1775-UP
C2A1479592				PULLEY GROUP, CRANKSHAFT
C2A1228931				PUMP GROUP, ENGINE OIL
C2A1154138				PUMP GROUP, FUEL INJECTION
C2A1077734				SEAL GROUP, CRANKSHAFT
C2A1228929				TURBO CHARGER GROUP
C2A1360826				ADDITIONAL ENGINE COMPONENTS
				AIR INLET SYSTEM
C2A1393318				AFTERCOOLER GROUP
				LUBRICATION SYSTEM
C2A1174074				OIL FILTER GROUP
C2A1R0739				OIL FILTER
C2A1175123				PAN GROUP, OIL (25L center sump)
C2A1323839				OIL FILTER GROUP, FUEL PUMP SIDE
C2A1322794				GAUGE GROUP, OIL LEVEL DIPSTICK
C2A4P7534				OIL MANIFOLD GROUP, CYLINDER BLOCK
				COOLING GROUP
C2A1323843	02-01-02-04-01			WATER PUMP GROUP
C2A4W0253				WATER PUMP COVER
C2A1173643				COOLER GROUP, ENGINE OIL
C2A1393319				LINES GROUP, ENGINE COOLING



## PARTS MANUAL

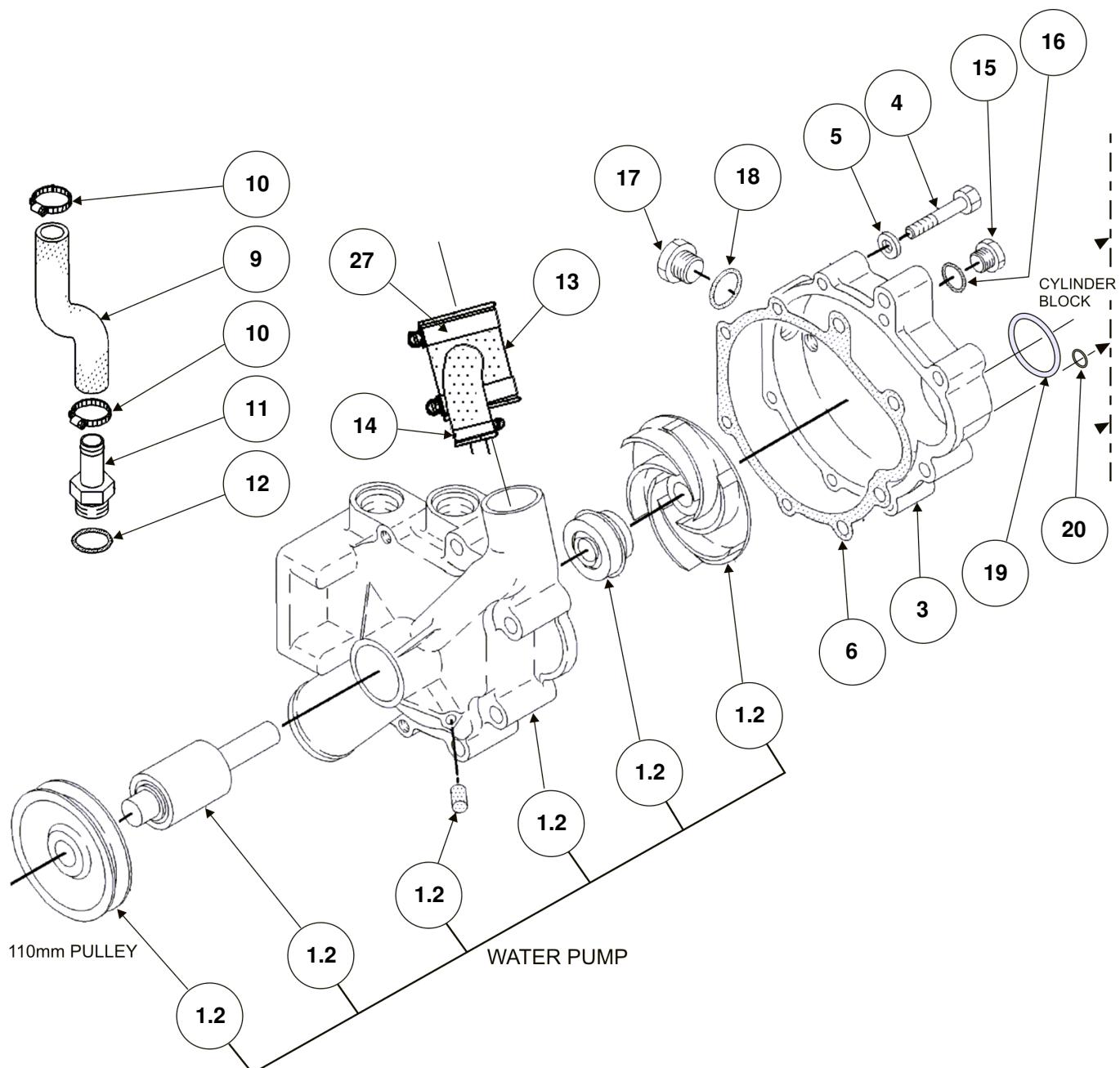
A2U220-211043

ENGINE GROUP

02-01-02-04

REV. 0

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	C2A1175135			FUEL SYSTEM
	C2A1R0751			FILTER GROUP, FUEL
	C2A1175119			FILTER, FUEL
	C2A9Y4146			DRIVE SYSTEM
	A2U220-212009			FLYWHEEL HOUSING, SAE 3
	C2A1323304			TORQUE CONVERTOR MOUNTING
				FLYWHEEL ASSEMBLY
				AIR COMPRESSOR

C2A1323843  
REV. 0**WATER PUMP GRP (REF. ONLY)****02-01-02-04-01**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION **02-01-02-04-01**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****C2A1323843****WATER PUMP GRP (REF. ONLY)****02-01-02-04-01****REV. 0**

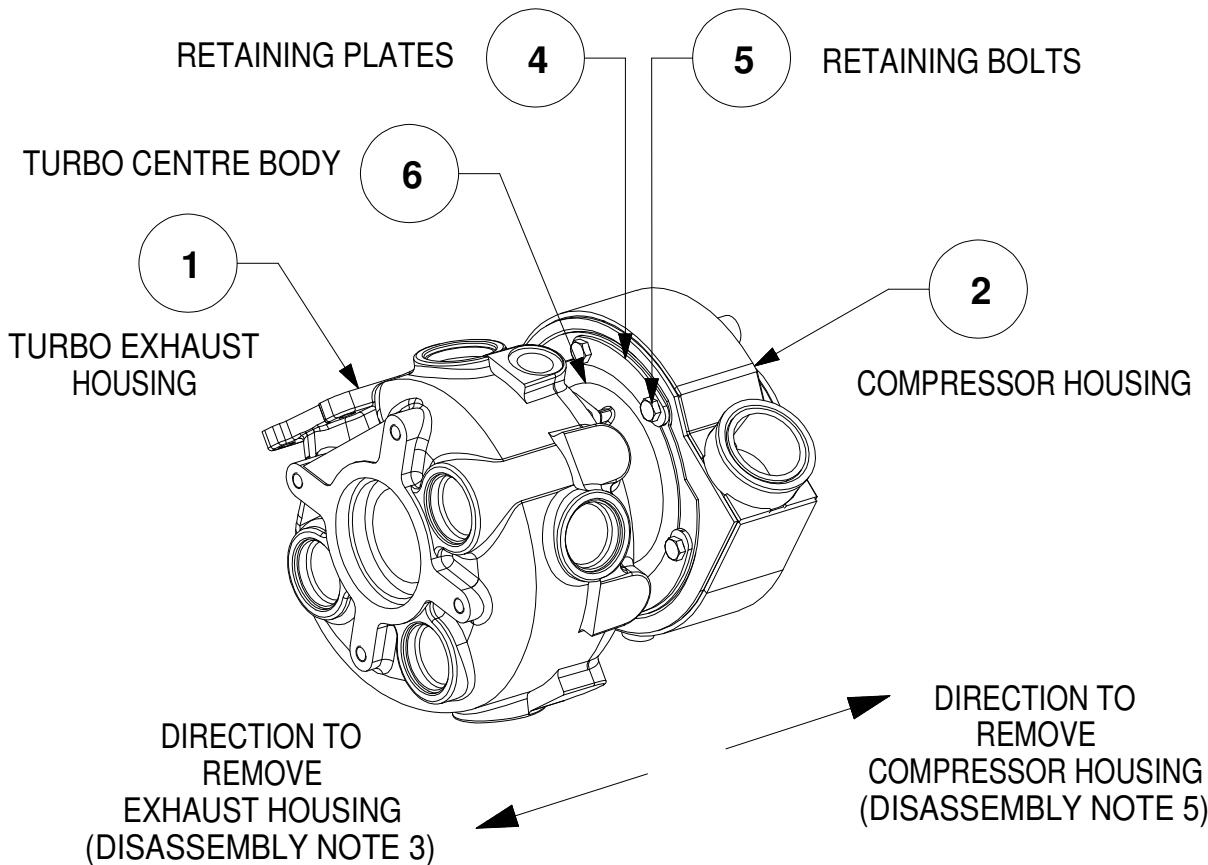
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1.2	C2A1593140	1	1	WATER PUMP ASSY.
3	C2A4W0253	1	1	REAR COVER
4	C2A6V3918	4	1	BOLT REAR COVER
5	C2A9M1974	4	1	WASHER REAR COVER
6	C2A4W7592	1	1	GASKET REAR COVER
9	C2A7C3615	1	1	HOSE
10	C2A8T9402	2	1	CLAMP
11	C2A0336783	3	1	NIPPLE
12	C2A3D2824	1	1	SEAL
13	C2A9Y9530	1	1	HOSE (ELEPHANT TRUNK)
14	C2A5V9155	1	1	CLAMP
15	C2A9S8003	1	1	PLUG
16	C2A1J9671	1	1	WASHER
17	C2A9S8005	1	1	PLUG
18	C2A3K0360	1	1	WASHER
19	4J-0524	1	1	SEAL-O-RING
20	2M-4453	1	1	SEAL-O-RING
27	C2A9M0164	2	1	CLAMP

A2U220-259009

## TURBO MODIFIED

02-01-02-09

REV. 1



## NOTES:

1. LABEL (REF. BD00004349) TO BE STAMPED WITH SERIAL NUMBER. USE 2.5mm STAMPS, NOT HAND ENGRAVED.
2. LABEL TO BE GLUED ON USING SILICONE ADHESIVE WITH CONTINOUS WORKING TEMPERATURE >150 DEG C. MAY BE ATTACHED AFTER PAINTING, OTHERWISE MASK FOR PAINTING.
3. SUPPLY WITH PRESSURE TEST CERTIFICATE. REFER NOTES ON DWGS A2U220-259007 AND A2U220-259008

## DISASSEMBLY

1. TURBO ASSEMBLY TO BE DISASSEMBLED WITH CARE
2. SIMPLY UNSCREW RETAINING PLATE BOLTS (12 OFF) & REMOVE RETAINING PLATES (6 OFF) THAT RETAIN EXHAUST HOUSING & COMPRESSOR HOUSING TO TURBO CENTER BODY.
3. GENTLY TAP EXHAUST HOUSING EVENLY IN DIRECTION OF ARROW. EXHAUST HOUSING SHOULD SLIDE OFF CENTER BODY SPIGOT.
4. ONCE REMOVED, TAKE CARE NOT TO DAMAGE EXHAUST TURBINE.
5. GENTLY TAP COMPRESSOR HOUSING EVENLY IN DIRECTION OF ARROW. COMPRESSOR HOUSING SHOULD SLIDE OFF CENTER BODY SPIGOT.
6. ONCE REMOVED, TAKE CARE NOT TO DAMAGE COMPRESSOR WHEEL.

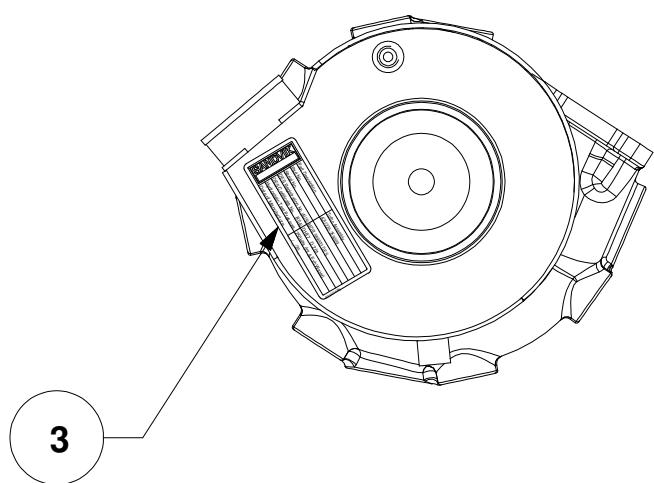
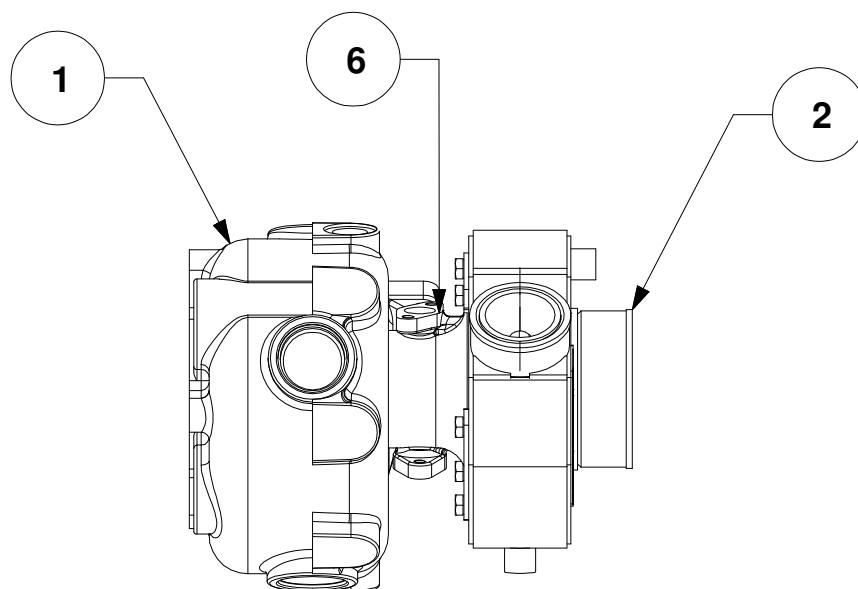
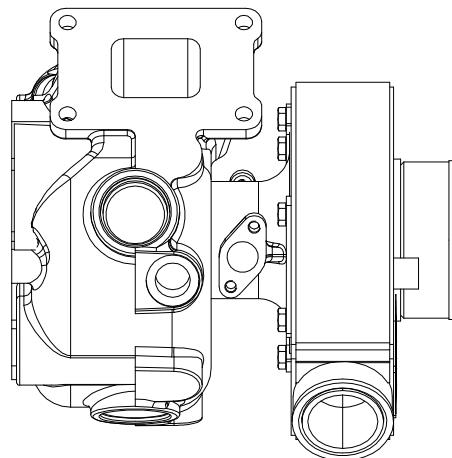
## ASSEMBLY

1. TURBO ASSEMBLY TO BE ASSEMBLED WITH CARE.
2. ENSURE ALL COMPONENTS ARE CLEAN AND FREE FROM DAMAGE.
3. CAREFULLY REFIT EXHAUST HOUSING TO CENTER BODY, REFIT RETAINING PLATES (3 OFF) & RETAINING BOLTS (6 OFF).
4. TORQUE EXHAUST HOUSING RETAINING PLATE BOLTS TO 16 Nm WHILE ROTATING TURBINE TO ENSURE IT IS RUNNING FREE.
5. CAREFULLY REFIT COMPRESSOR HOUSING TO CENTER BODY. REFIT RETAINING PLATES (3 OFF - C2A1219799) & RETAINING PLATE BOLTS (6 OFF).
6. TORQUE COMPRESSOR HOUSING RETAINING BOLTS TO 7.5 Nm WHILE ROTATING COMPRESSOR WHEEL TO ENSURE IT IS RUNNING FREE.

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 02-01-02-09

Sandvik Underground Mining Flameproof Equipment

**A2U220-259009****TURBO MODIFIED****02-01-02-09****REV. 1**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    02-01-02-09**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

A2U220-259009

TURBO MODIFIED

02-01-02-09

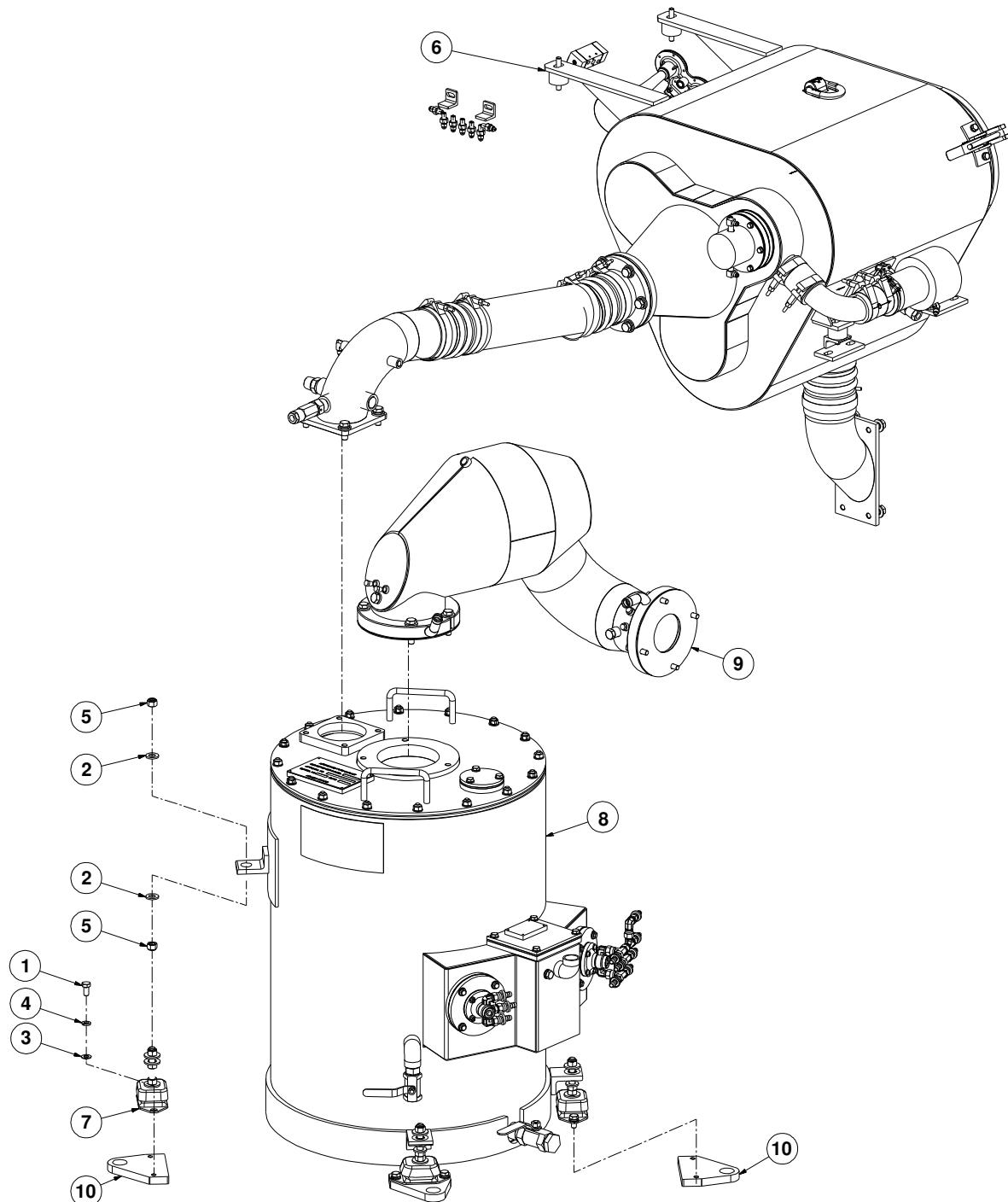
REV. 1

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-259007	1		Turbo Modifications
2	A2U220-259008	1		COMPRESSOR MODIFICATIONS
3	BD00004349	1		LABEL - Turbo Assembly
4	C2A1219799	3		C2A1219799
5	C2A1255466	6		Bolt Hex Head, M8 x 12mm
6	C2A1363973	1		TURBO CENTER ASSEMBLY

**A2U220-250111**  
**REV. 8**

**ENGINE EXHAUST GROUP WITH  
PARTICULATE FILTER**

**02-02**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 02-02**

Sandvik Underground Mining Flameproof Equipment

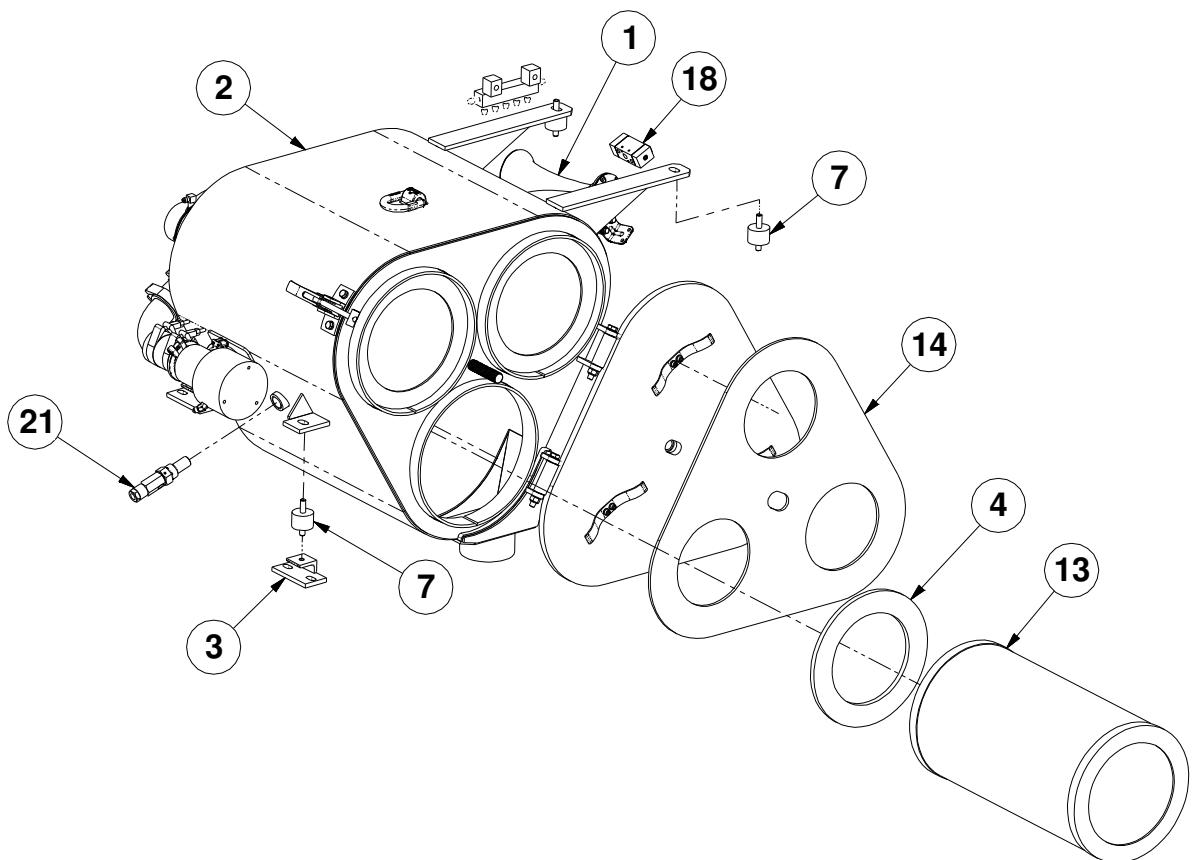
**A2U220-250111****ENGINE EXHAUST GROUP WITH  
PARTICULATE FILTER****02-02****REV. 8**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502799		8	Bolt Hex Head M10 x 20mm Long
2	450061619		8	Washer, Flat 12 mm
3	450062508		8	Washer, Flat 10 mm
4	450081022		8	Washer, Spring 10 mm
5	455669036		8	Hex Nyloc Nut M12 X 1.75
6	A2U220-250137	02-02-13	1	Exhaust- With Part Filter
7	A2U900-191929		4	Isomount, Flexible
8	A2U900-250134	02-02-01-01	1	Exhaust Conditioner Group
9	A2U900-250135	02-02-03	1	Purifier Assy
10	A2U220-252066		4	Mount Plate

**A2U900-250164**  
**REV. 0**

**EXHAUST FILTER GROUP - WITH  
PARTICULATE**

**02-02-01**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

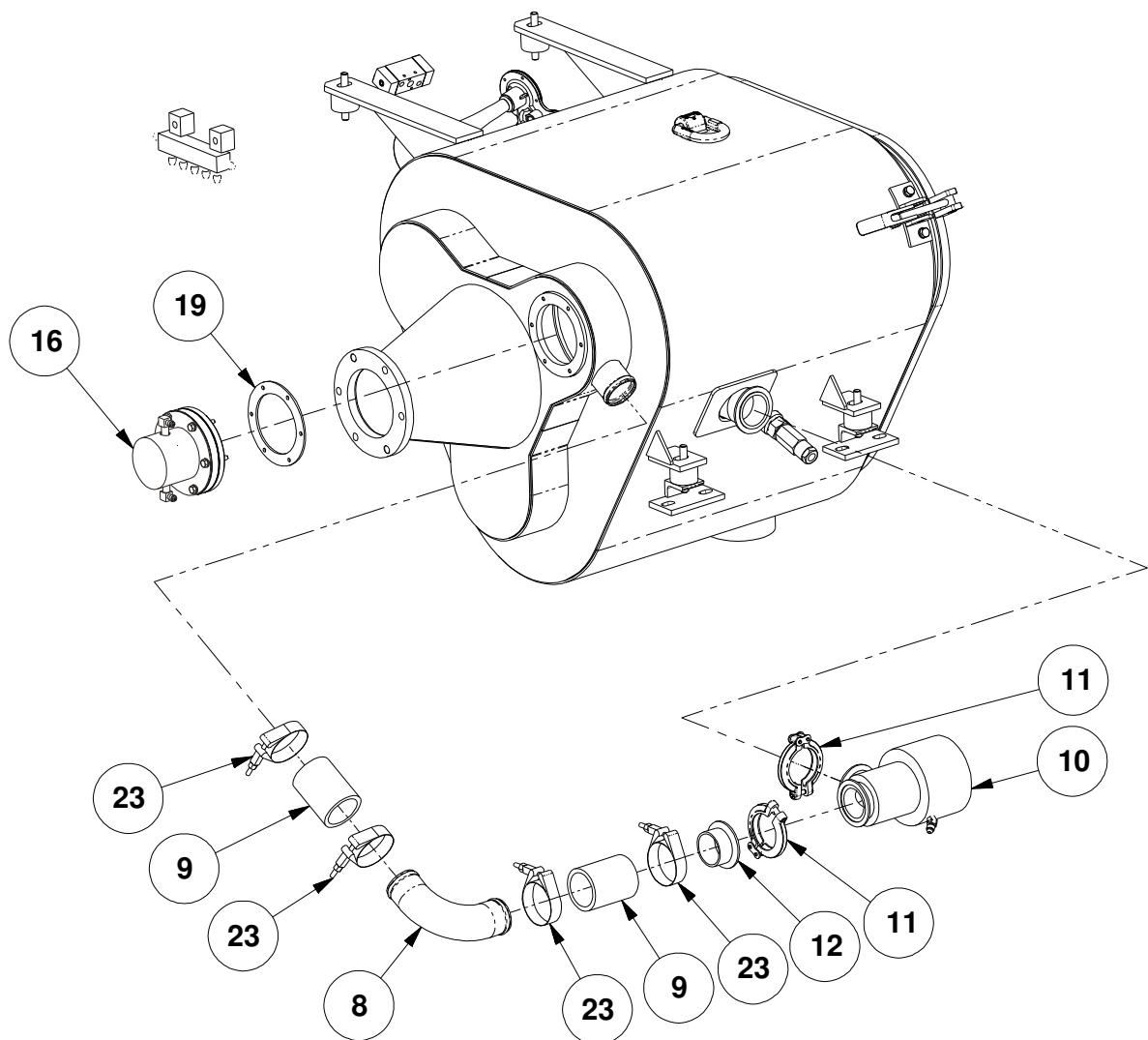
**SECTION    02-02-01**

**Sandvik Underground Mining Flameproof Equipment**

**A2U900-250164**  
**REV. 0**

**EXHAUST FILTER GROUP - WITH  
PARTICULATE**

**02-02-01**



**Exhaust Filter Group**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

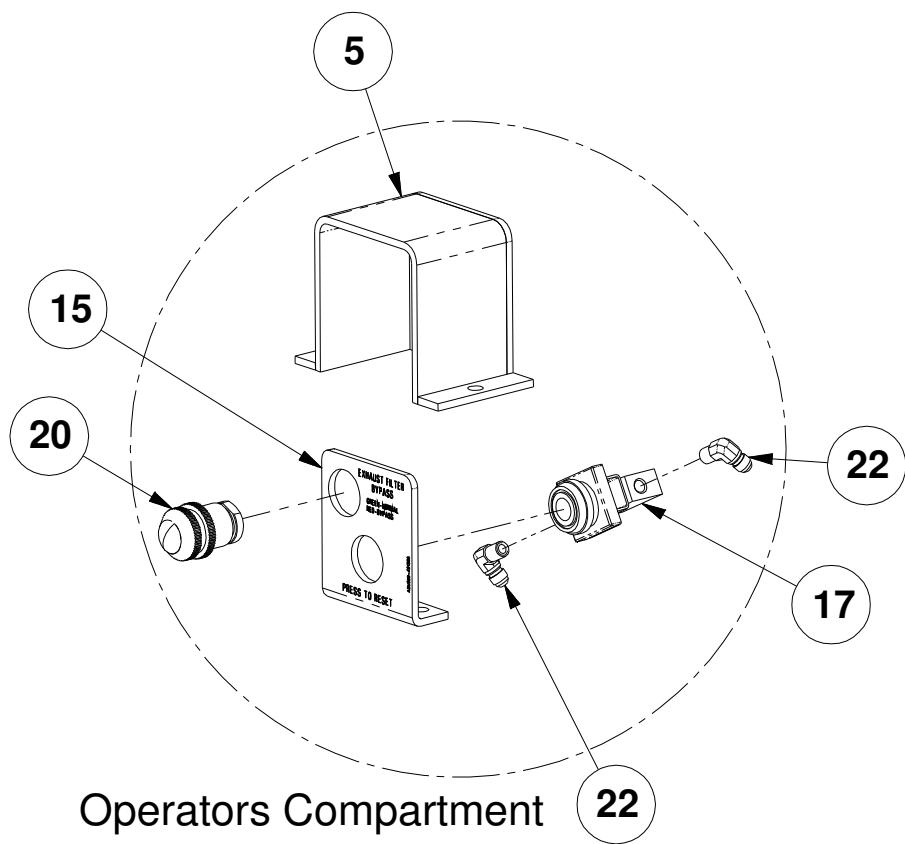
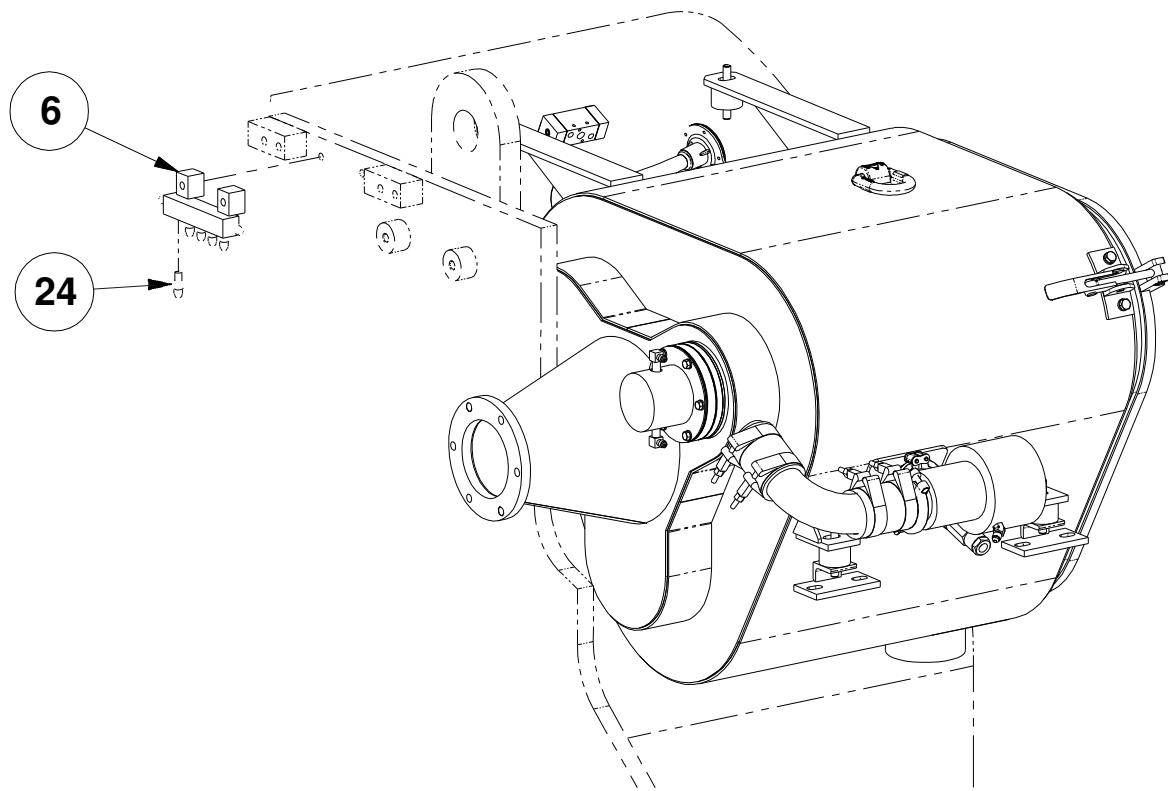
**SECTION    02-02-01**

**Sandvik Underground Mining Flameproof Equipment**

**A2U900-250164**  
**REV. 0**

**EXHAUST FILTER GROUP - WITH  
PARTICULATE**

**02-02-01**



**Operators Compartment**

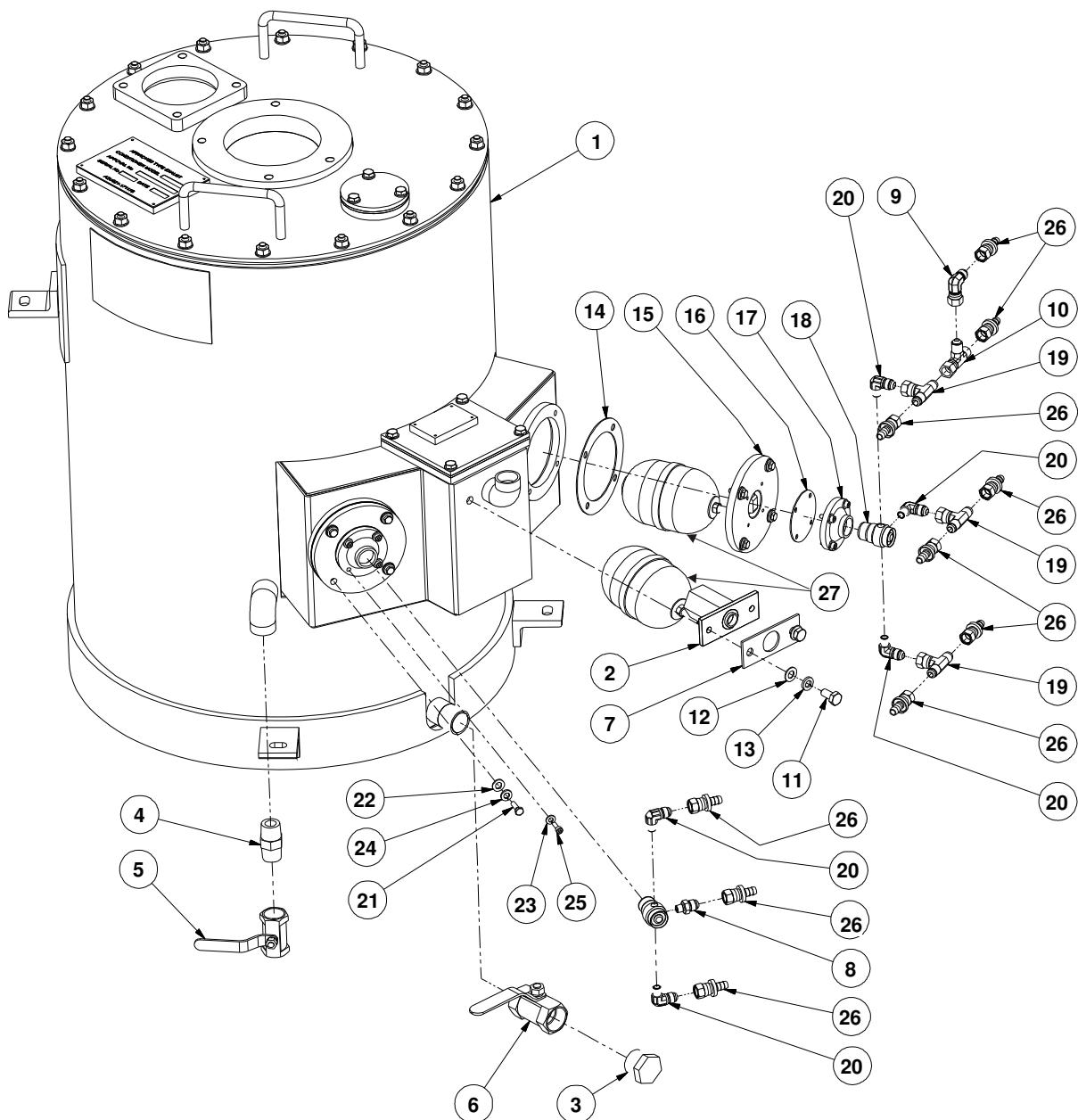
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    02-02-01**

**Sandvik Underground Mining Flameproof Equipment**

**EXHAUST FILTER GROUP - WITH  
PARTICULATE**
**02-02-01**
**A2U900-250164**
**REV. 0**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	016-63028		1	Air Horn Set
2	A2U220-252038	02-02-13-01	1	Particulate Filter
3	A2U220-291228		2	Particulate Housing Mount
4	A2U220-378028		3	Seal 10 mm THICK
5	A2U220-491269		1	Bracket, Back Pressure Gauge
6	A2U220-672039		1	Air Manifold
7	A2U900-191928		4	Cushion Connector
8	A2U900-255353		1	Elbow 90 DIA 50.8 OD x 1.6 WT
9	A2U900-255354		2	Radiator Hosing 63.5 OD x 50.8 ID x 80 LG
10	A2U900-259017		1	Wastegate/ Exhaust Bypass
11	A2U900-259018		2	Clamp-Wastegate
12	A2U900-259019		1	Round Bar Dia 70x 30 LG
13	A2U900-292008		3	Filter Element
14	A2U900-378032		1	6 Mm Rubber Door Seal
15	A2U900-491395		1	Plate 5x 50 x 88 x 100 LG.
16	A2U900-694102		1	Diaphragm Valve
17	A2U900-694103		1	Reset Valve
18	A2U900-694104		1	Pilot Valve
19	A2U900-694106		1	Neoprene Gasket DIA 125 x 3 THK
20	A2U900-690025		1	Lens Indicator-Green/ Red
21	A2U936-694046		1	Exhaust Sentinel
22	D17-0207		2	Elbow 90 1/8" NPT x 7/16" JIC M/M
23	D2NP14-8337		4	Clamp-Hose 50 MM
24	DB15-0207		7	Nipple 1/8" BSPT x 1/8" JIC

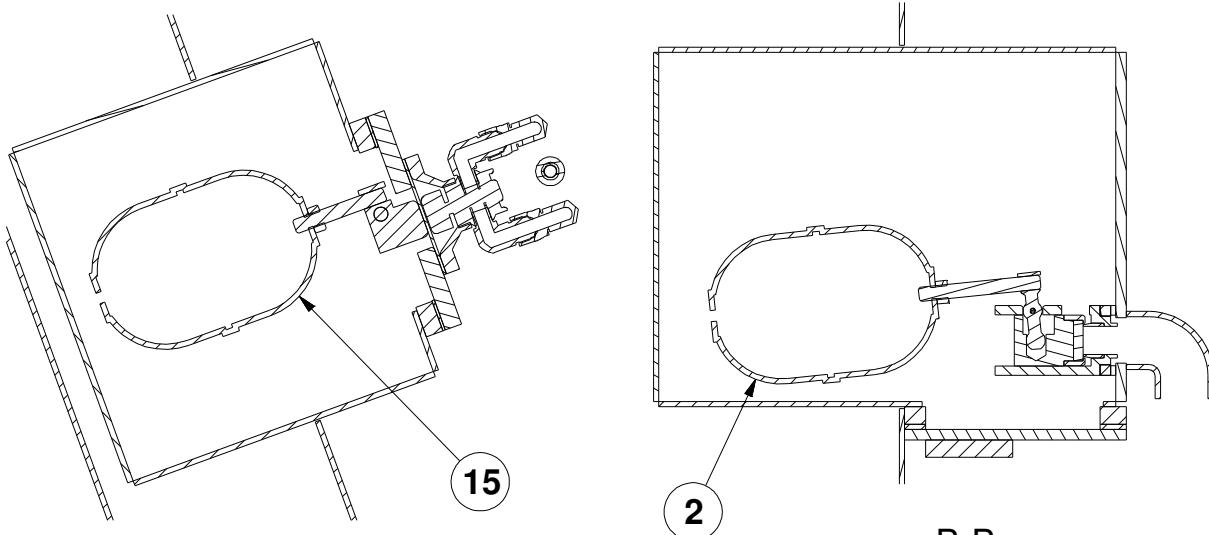
**A2U900-250134**
**EXHAUST CONDITIONER GROUP**
**02-02-01-01**
**REV. 4**

**A2U900-250134\_4a**
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION    02-02-01-01**
**Sandvik Underground Mining Flameproof Equipment**

**A2U900-250134**

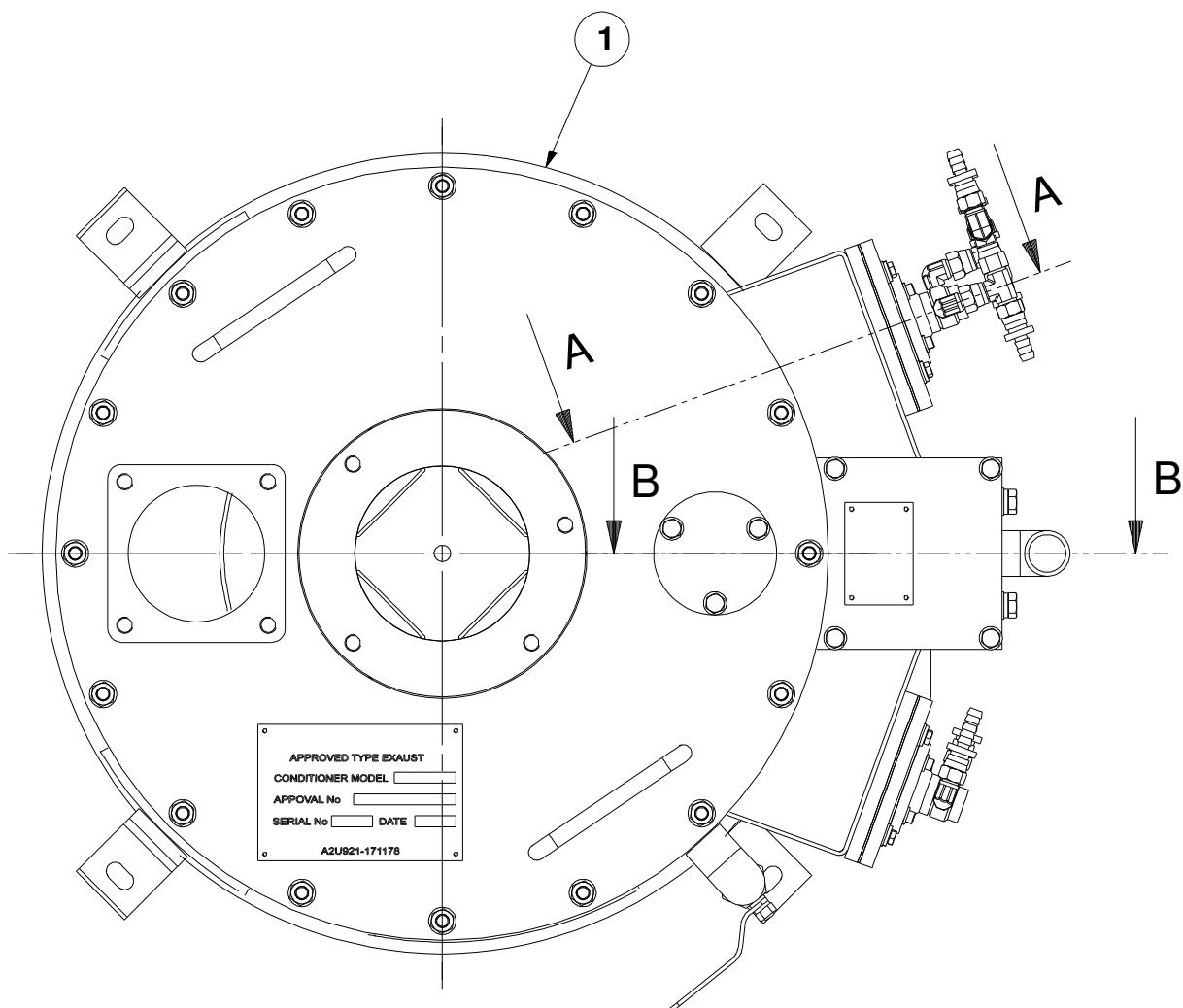
**EXHAUST CONDITIONER GROUP**

**02-02-01-01**

**REV. 4**



**SECTION A-A**  
TYPICAL TWO PLACES



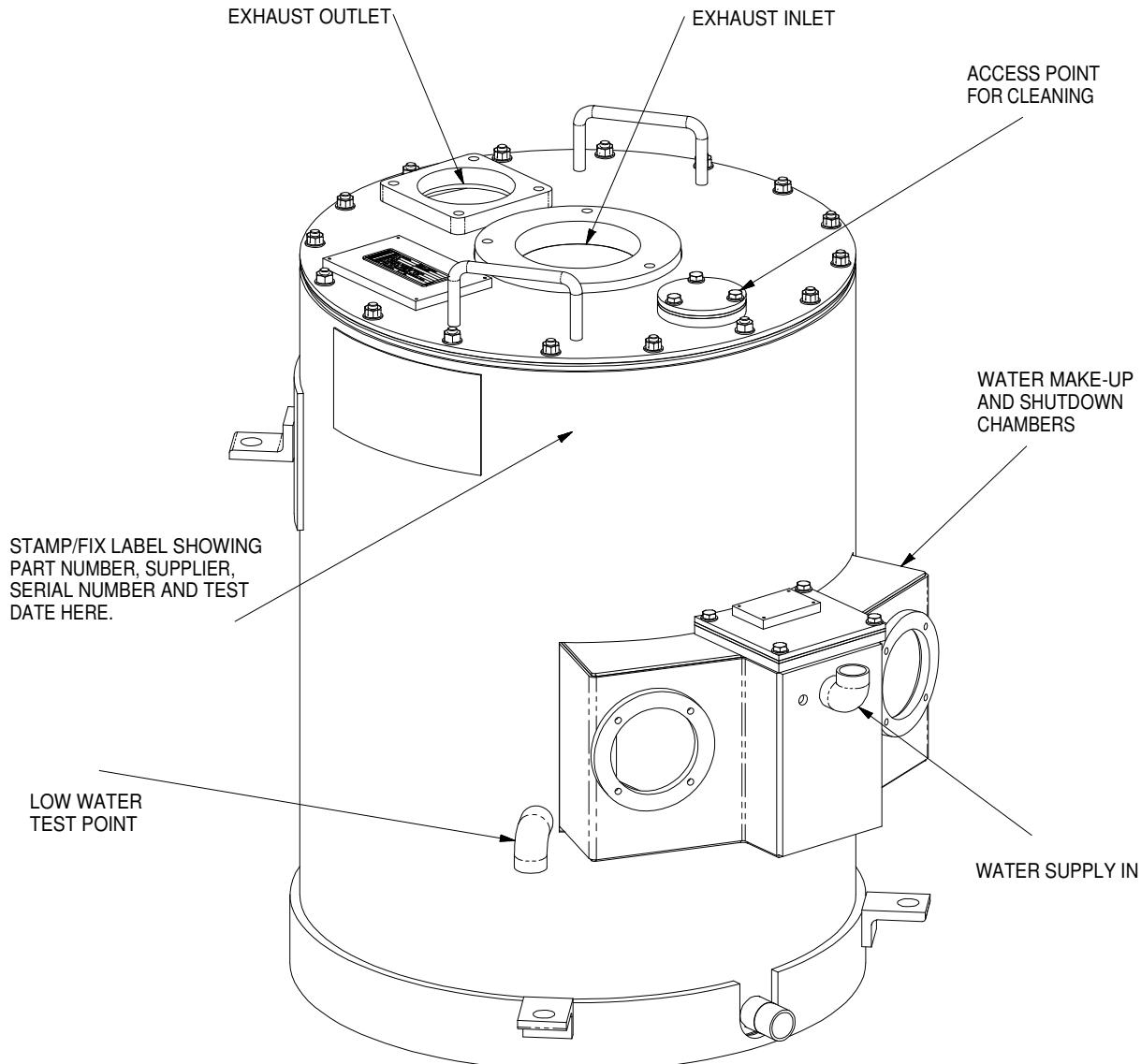
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 02-02-01-01**

**Sandvik Underground Mining Flameproof Equipment**

**A2U900-250134**
**EXHAUST CONDITIONER GROUP**
**02-02-01-01**
**REV. 4**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	A2U220-251089-7	02-02-01-01-01	1	Exhaust Conditioner
2	A2U220-256035		1	Water Make-Up Valve Ass'Y
3	A2U900-255302		1	Plug
4	A2U936-255185		1	Nipple S/S 3/4" NPT
5	AFP1004-23		1	Ball Valve 3/4" BSP
6	AFP1009-5		1	Ball Valve 1" BSP
7	B2D12168		1	Gasket, Water Make-Up Valve
8	D15-0209		1	Nipple 1/8" NPT x 9/16" JIC
9	D50-0909		1	Adaptor Union 90 9/16" JIC x 9/16" JIC M/F
10	DA82-090909		1	Tee 9/16 JIC M/F/M
11	445502799		2	Bolt Hex Head M10 x 20mm Long
12	450062508		2	Washer Flat, 10 mm
13	450081022		2	Washer Spring, 10 mm
14	A2U220-254090		2	Gasket, Float Ass'Y
15	A2U220-256034		2	Shutdown Float Ass'Y
16	A2U900-254084		2	Diaphragm, Humphrey Valve
17	A2U900-256033		2	Adaptor, Humphrey Valve
18	AFP1006-4		2	Humphrey Valve
19	DA81-090909		3	Tee 9/16" JIC M/M/F
20	D17-0209		5	Elbow 90 1/8" NPT x 9/16" JIC M/M
21	445502660		8	Bolt Hex Head M6 x 20mm Long
22	450062506		8	Washer Flat, 8 mm
23	450081116		8	Washer Spring, 6 mm
24	450081120		8	Washer Spring, 8 mm
25	A2U900-392169		8	Shcs M5 x 16 LG. S/S
26	D605-0906		10	Hose End, Low Pressure
27	A2U913-256005		3	Float (Only 2 Shown)

**A2U220-251089**
**EXHAUST CONDITIONER**
**02-02-01-01-01**
**REV. 7**


**THIS IS AN APPROVED/CERTIFIED COMPONENT.  
DO NOT CHANGE PRIOR TO CHECKING AGAINST APPROVAL DRAWING.**

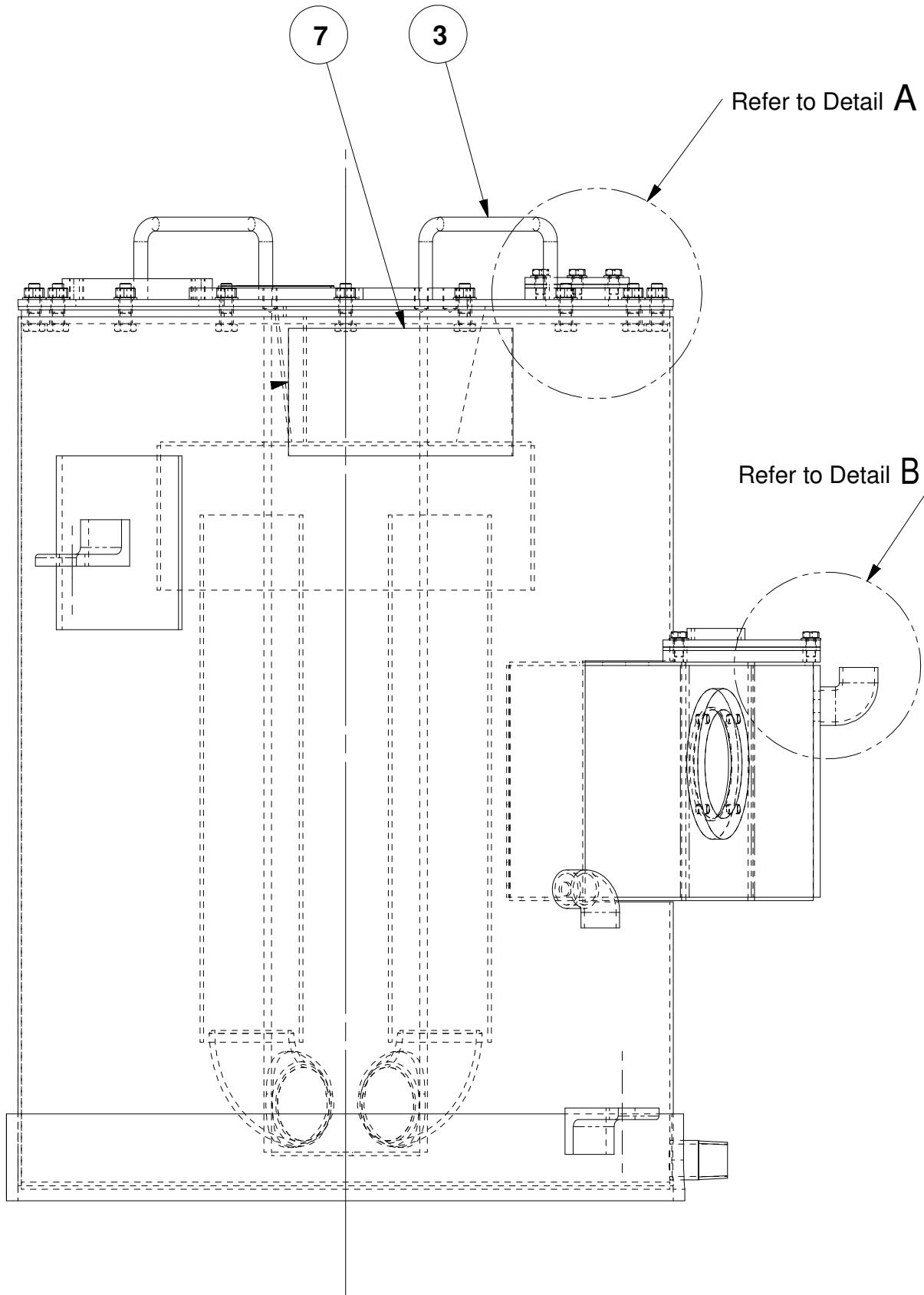
**NOTES.**

1. HYDROSTATICALLY TEST EXHAUST CONDITIONER ASSEMBLY TO 350kPa FOR 3 MINUTES.
2. STAMP/LABEL WITH VAMT PART NUMBER, SUPPLIER SERIAL NUMBER AND TEST DATE.
3. SUPPLY TEST CERTIFICATE.
4. LABEL (REF. BD00004361) TO BE STAMPED WITH SERIAL NUMBER.  
USE 2.5mm STAMPS, NOT HAND ENGRAVED.
5. LABEL TO BE GLUED ON USING SILICONE ADHESIVE WITH CONTINOUS  
WORKING TEMPERATURE >150 DEG C. MAY BE ATTACHED AFTER  
PAINTING, OTHERWISE MASK FOR PAINTING.

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    02-02-01-01-01**

Sandvik Underground Mining Flameproof Equipment

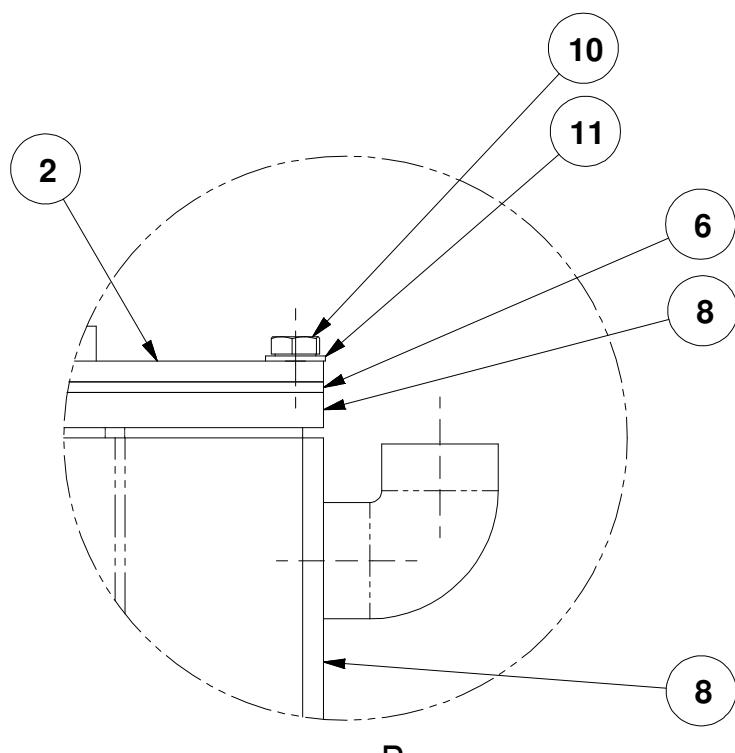
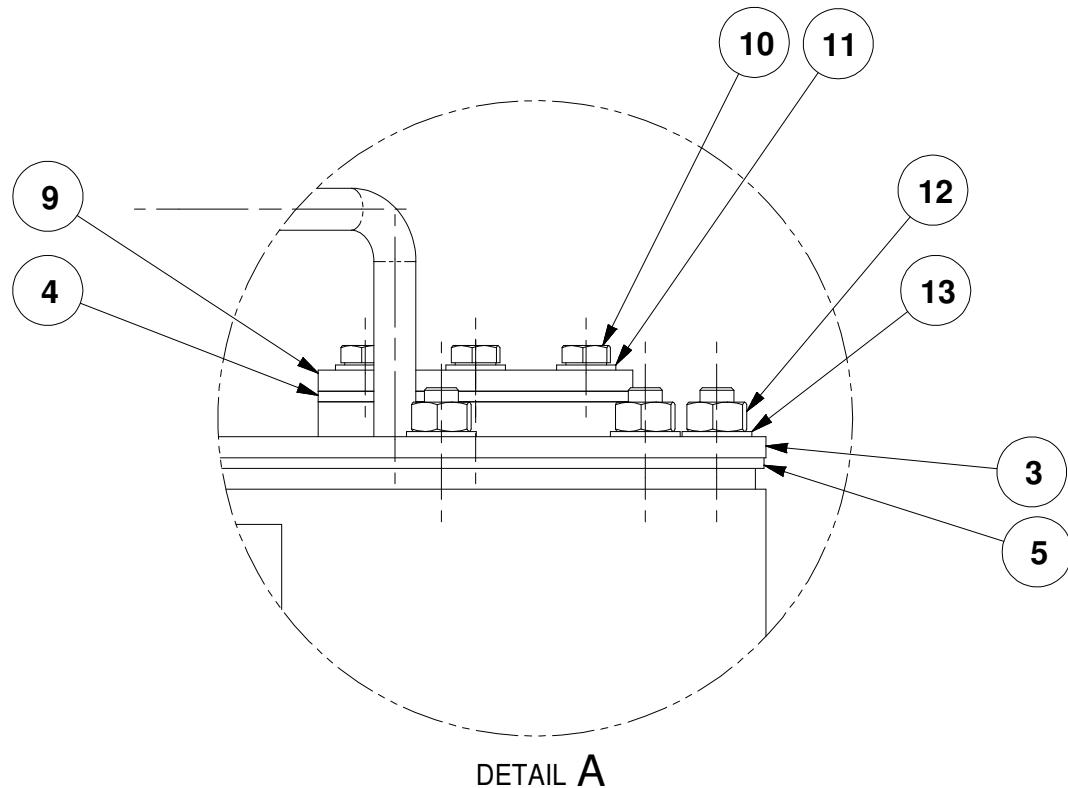
**A2U220-251089****EXHAUST CONDITIONER****02-02-01-01-01****REV. 7**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

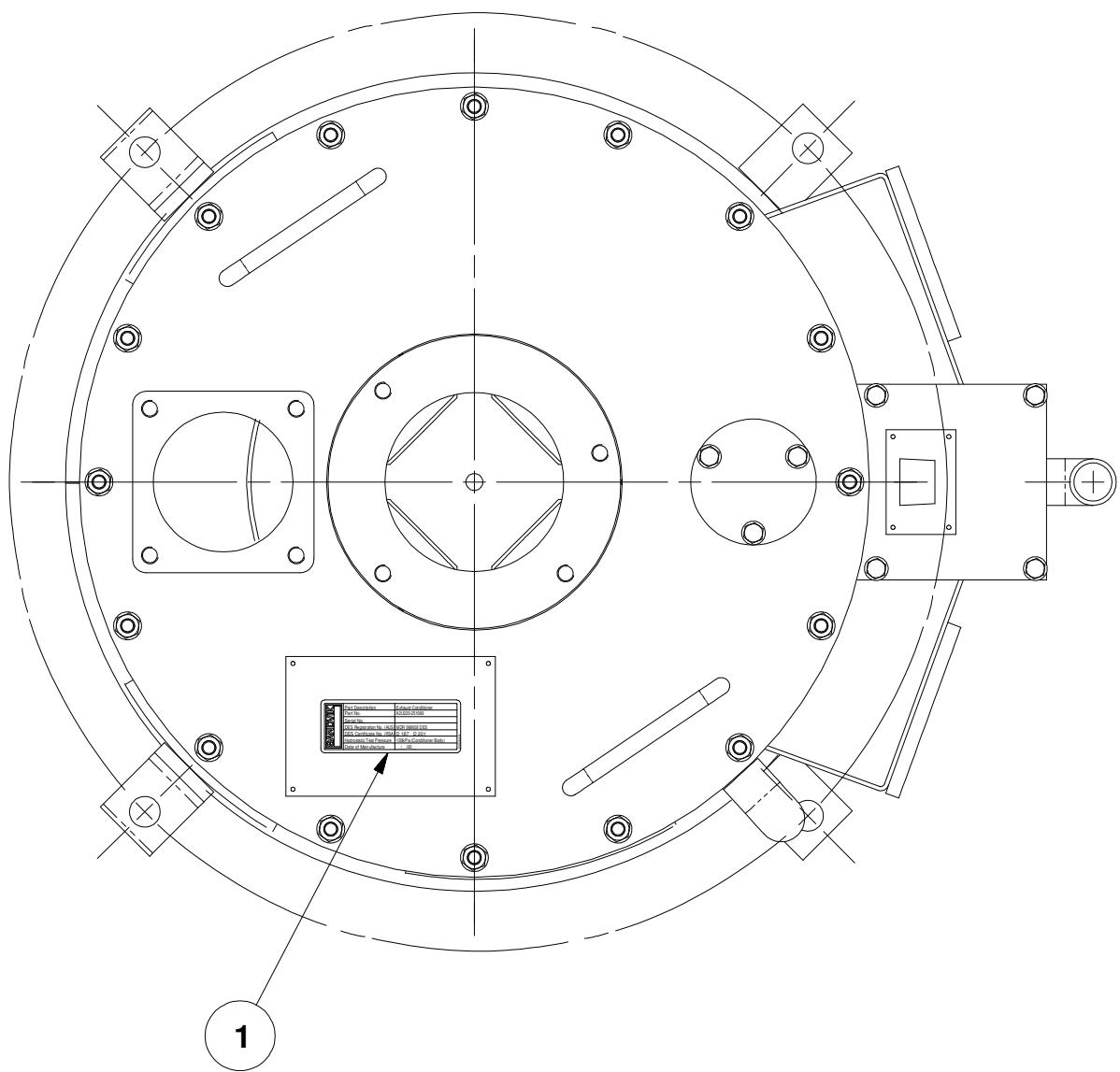
**SECTION 02-02-01-01-01**

Sandvik Underground Mining Flameproof Equipment

**A2U220-251089**  
**REV. 7**

**EXHAUST CONDITIONER****02-02-01-01-01****DETAIL B**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-251089****EXHAUST CONDITIONER****02-02-01-01-01****REV. 7**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

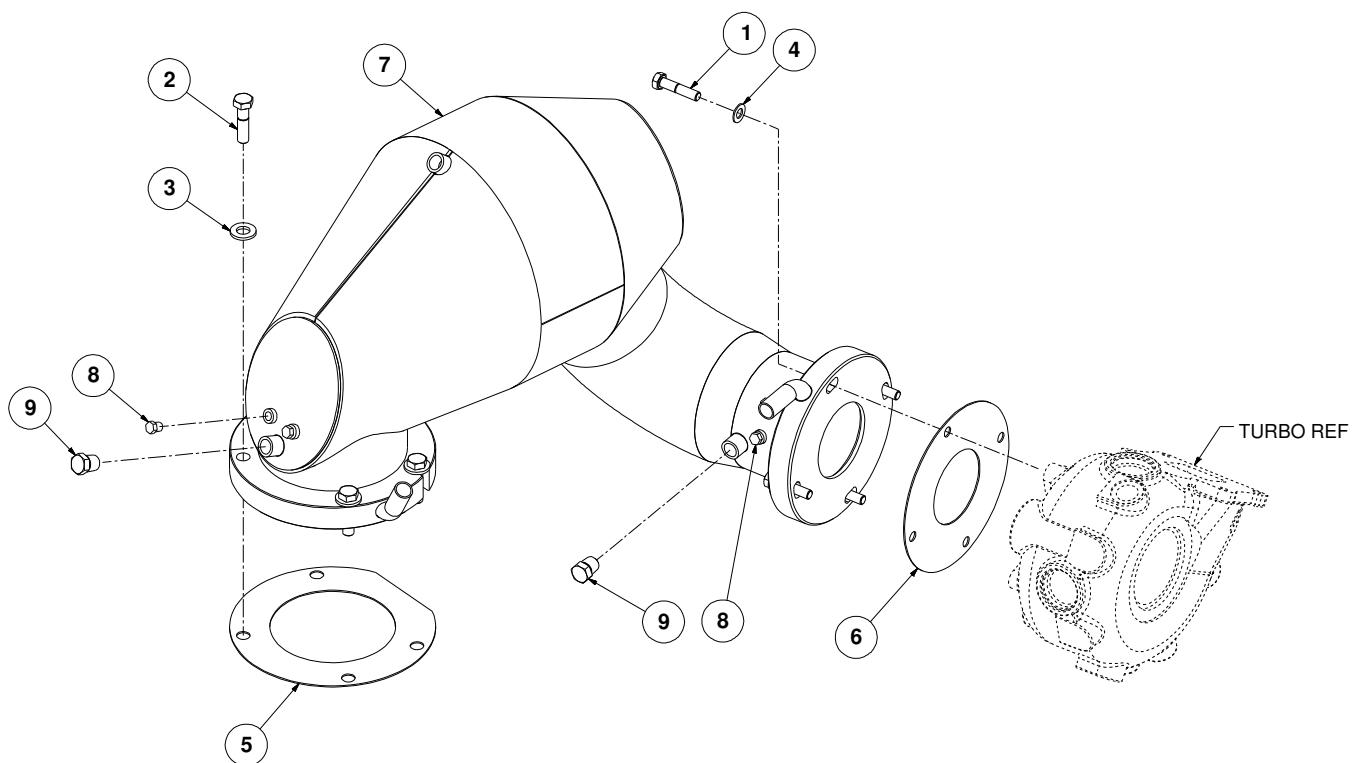
**SECTION    02-02-01-01-01**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U220-251089****EXHAUST CONDITIONER****02-02-01-01-01****REV. 7**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BD00004361	1	1	LABEL - Exhaust Conditioner
2	A2U220-252036	1	1	COVER-W/M CHAMBER
3	A2U220-251090	1	1	INNER BODY
4	A2U900-254082	1	1	COVER-INSERT
5	A2U220-254088	1	1	GASKET
6	A2U220-254089	1	1	GASKET-W/M CHAMBER
7	A2U130-171207	1	1	NAME PLATE
8	A2U220-251091	1	1	OUTER BODY
9	A2U900-252029	1	1	INNER BODY
10	445502755	7	1	Bolt Hex Head, M8 x 16mm Long
11	450062506	7	1	Washer, Flat, 8 mm
12	A2U900-392103	16	1	Hex Nut, M10 X 1.5
13	A2U900-392104	16	1	Washer, Flat, 10 mm

**A2U900-250135**  
**REV. 1**

**PURIFIER ASSEMBLY****02-02-03**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    02-02-03**

Sandvik Underground Mining Flameproof Equipment

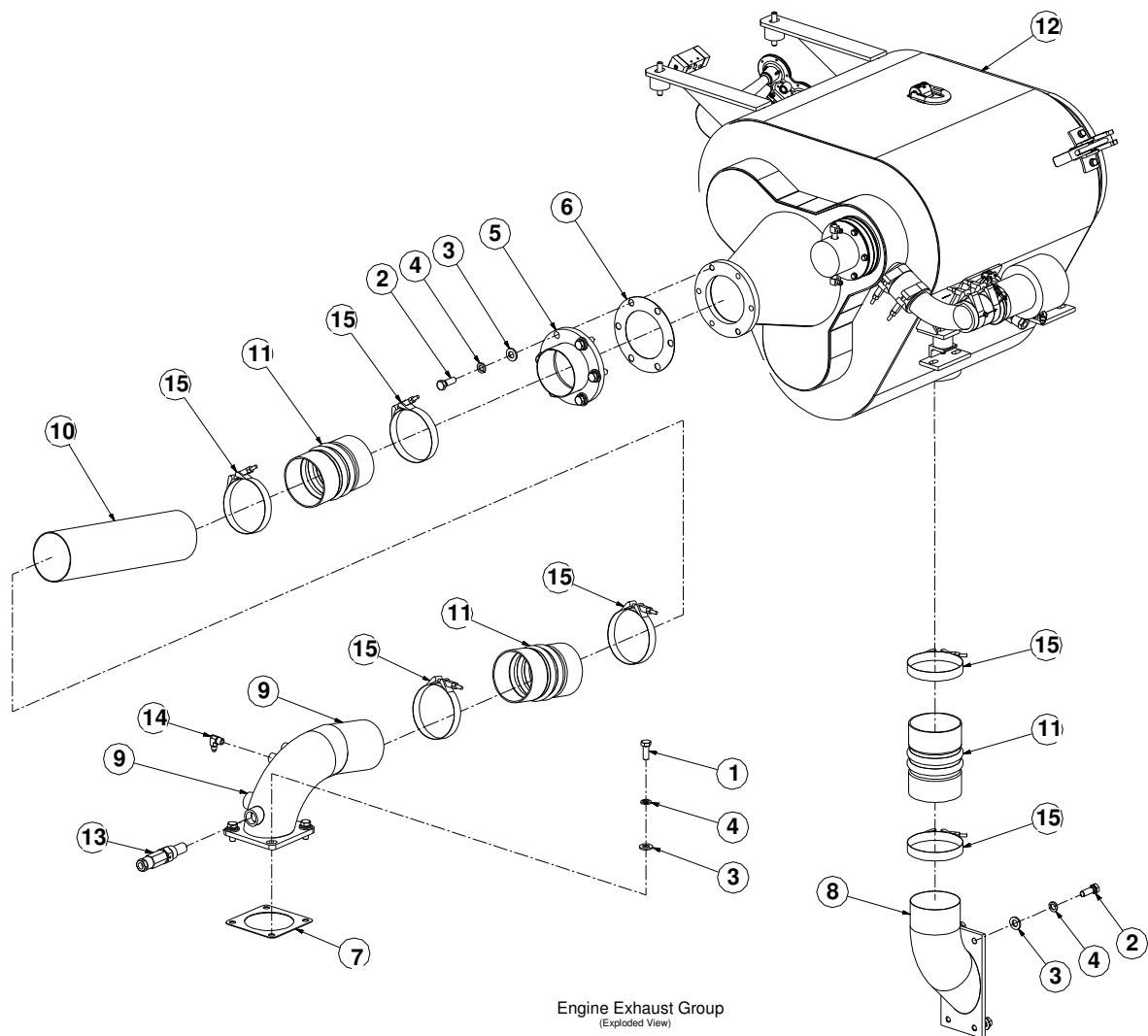
**A2U900-250135****PURIFIER ASSEMBLY****02-02-03****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	45502807	4		Bolt, Hex Hd M10 x 45mm Long
2	445502848	4		Bolt, Hex Hd M12 x 45mm Long
3	450061619	4		Washer, Flat 12mm
4	450062508	4		Washer, Flat 10mm
5	A2U220-254091	1		Gasket Exhaust Downpipe To Scrubber Flange
6	A2U220-254092	1		Gasket, Turbo To Exhaust Downpipe
7	A2U220-257011	1		Purifier
8	D59-02	4		Plug 1/8" BSPT
9	D60-06	2		Plug 3/9" NPT

**A2U220-250137**  
**REV. 2**

**ENGINE EXHAUST GROUP WITH  
PARTICULATE FILTER**

**02-02-13**



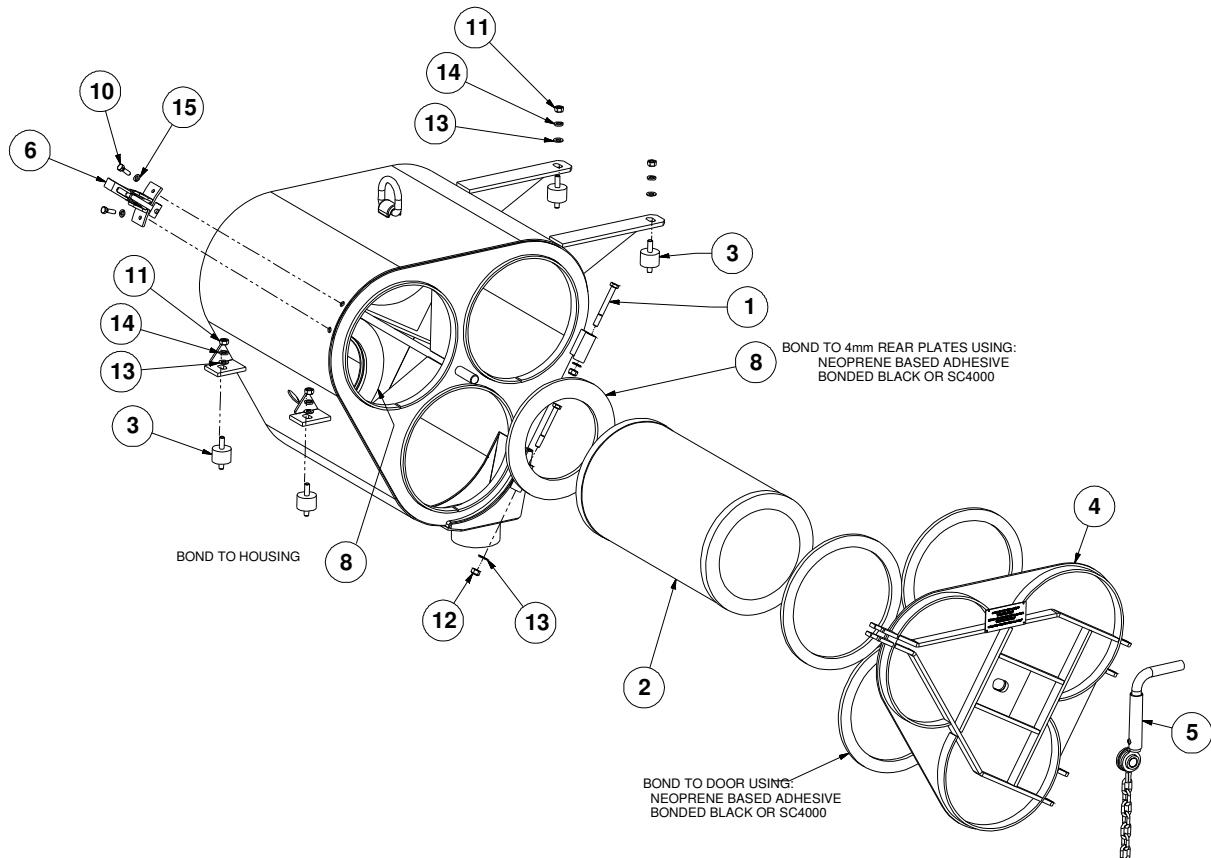
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    02-02-13**

**Sandvik Underground Mining Flameproof Equipment**

**A2U220-250137****ENGINE EXHAUST GROUP WITH  
PARTICULATE FILTER****02-02-13****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502843	4		Bolt Hex Head M12 x 30mm Long
2	445502845	10		Bolt Hex Head M12 x 35mm Long
3	450061619	14		Washer, Flat 12 mm
4	450081124	14		Washer, Spring 12 mm
5	A2U130-255337	1		Exhaust-Outlet Pipe
6	A2U220-254094	1		Gasket-Outlet Pipe
7	A2U220-254095	1		Gasket, Exhaust Outlet Pipe
8	A2U220-255301	1		Exhaust Pipe Outlet
9	A2U220-255321	1		Pipe, Exhaust Outlet
10	A2U220-255340	1		Exhaust-Outlet Pipe
11	A2U450-244083	3		Bellows, Straight 4" O.D.
12	A2U900-250164	1		Exhaust Filter Group
13	A2U936-694046	1		Exhaust Sentinel
14	D17-0407	1		Elbow 90 1/4" NPT x 7/16" JIC M/M
15	D2NP14-8305	6		T-Bolt Clamp 4" I.D.
16	D60 12	1		Plug 3/4" NPT

**A2U220-252038****EXHAUST FILTER HOUSING****02-02-13-01****REV. 3**

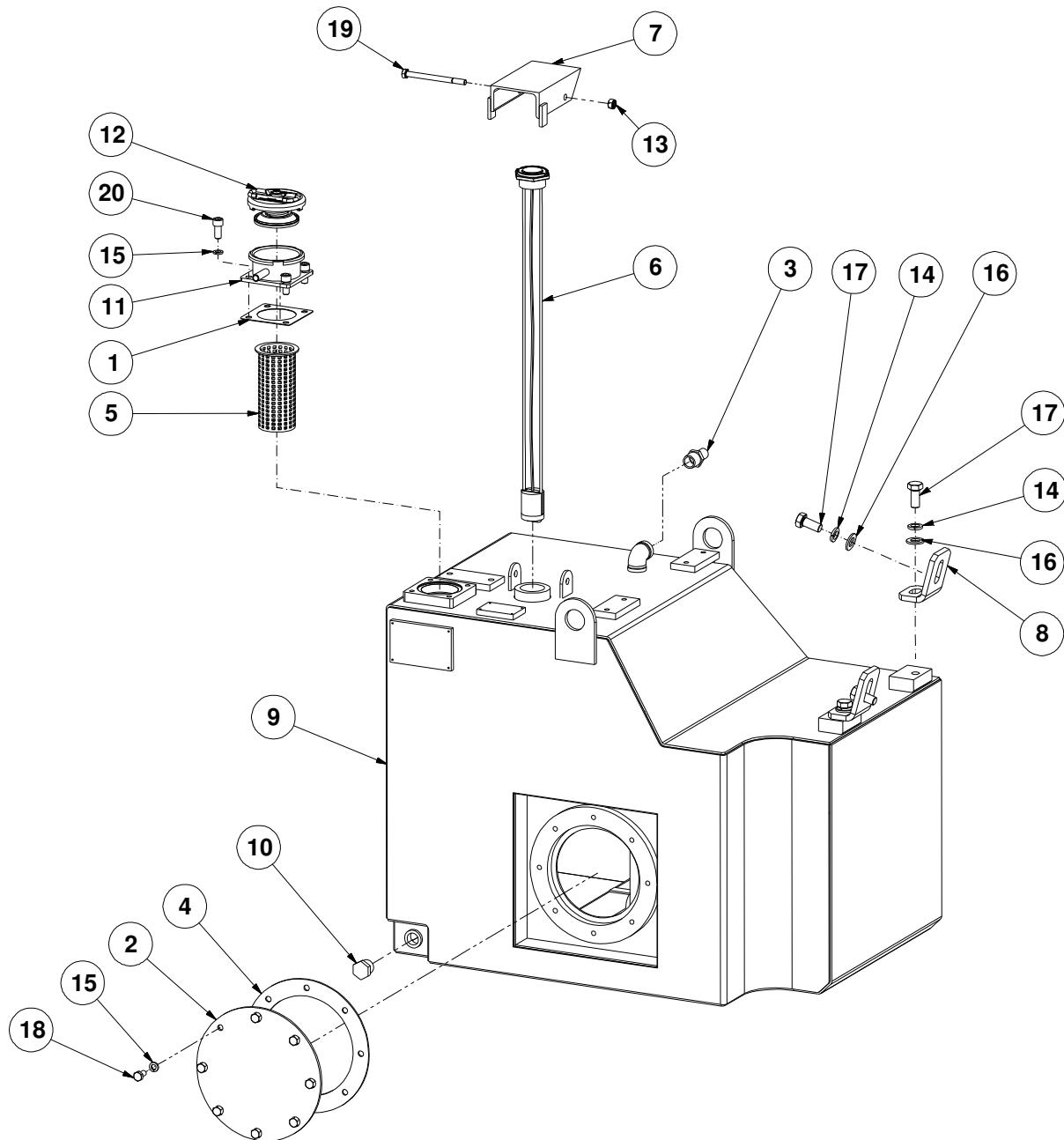
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    02-02-13-01**

Sandvik Underground Mining Flameproof Equipment

**A2U220-252038****EXHAUST FILTER HOUSING****02-02-13-01****REV. 3**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402816	3		BOLT, HEX HD M10 x 90 LG
2	A2U900-292008	4		ELEMENT
3	A2U900-191928	1		CUSHION CONNECTOR
4	A2U220-252039	1		DOOR
5	A2U220-196142	1		HANDLE
6	A2U913-252021	1		LATCH
7	A2U900-252050	3		PARTICULATE FILTER
8	A2U220-378028	3		SEAL 10mm THICK
9	A2U220-378029	3		SEAL 10mm THICK
10	445504761	2		BOLT, HEX HD M8 x 25mm LG
11	455309034	4		NUT, HEX M10 x 1.5
12	455669034	2		NUT, NYLOC M10 x 1.5
13	450062508	6		WASHER, FLAT M10
14	450081022	4		WASHER, SPRING M10
15	450081120	2		WASHER, SPRING M8

**A2U220-250108****MAKE UP TANK GROUP 275L****02-03****REV. 5**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-03**

Sandvik Underground Mining Flameproof Equipment

**A2U220-250108****MAKE UP TANK GROUP 275L****02-03****REV. 5**

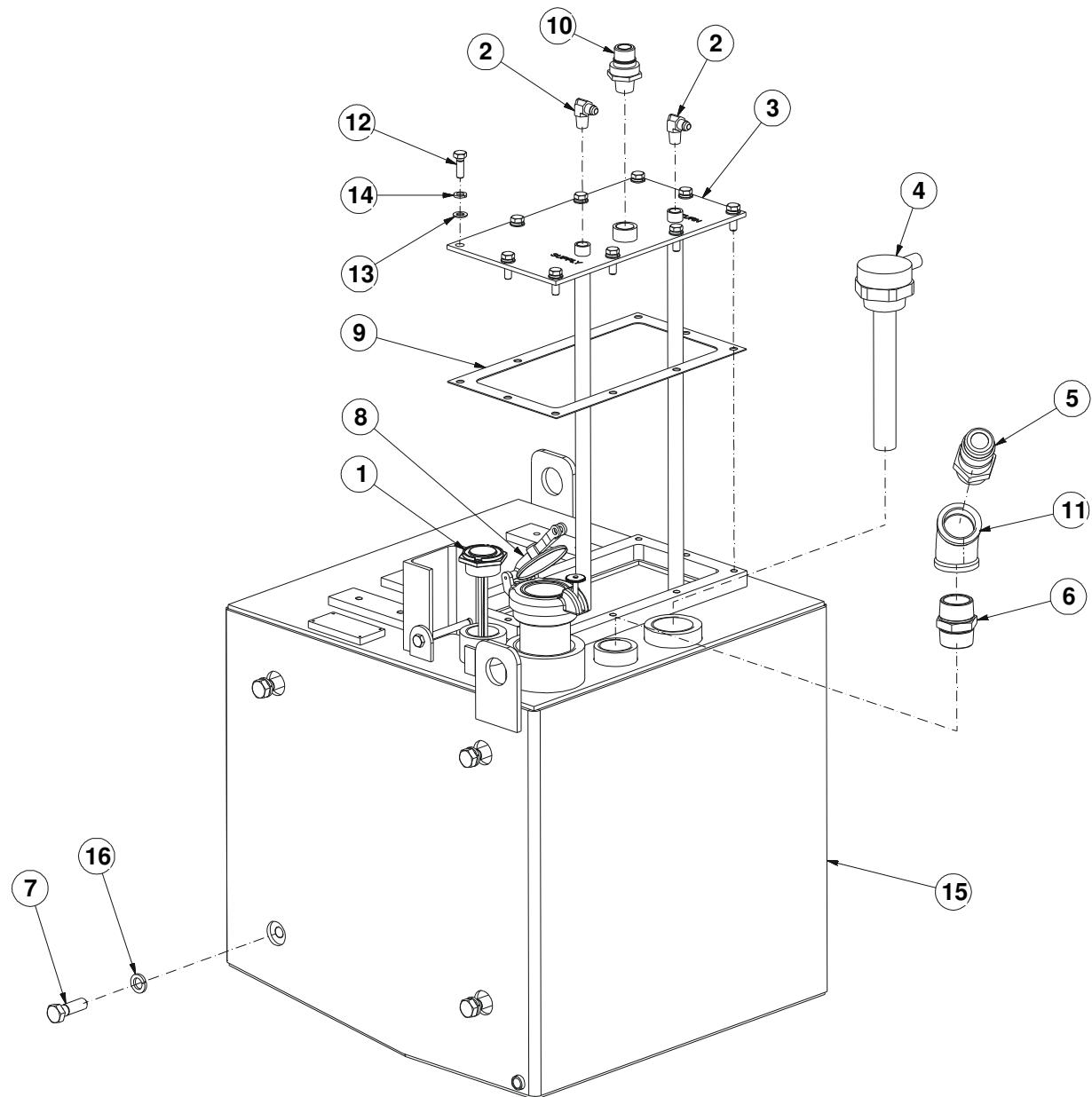
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	SGA25C	1	1	GASKET, FILLER NECK 400 SERIES
2	A2U955-252017	1	1	Inspection Plate
3	A2U936-255184	1	1	Hose Tail, 3/4"Npt X 19Mm Od
4	A2U921-254035	1	1	Gasket - Scrubber/Fuel Tank
5	A2U900-592030	1	1	Strainer S.S.
6	A2U900-237007	1	1	Fluid Level Gauge - 650Mm
7	A2U900-231034	1	1	Gauge Cover
8	A2U220-252065	2	1	Holder
9	A2U220-251093	1	1	Make Up Tank
10	A2U130-255261	1	1	Hex. Head Plug, 3/4" Npt 2000 Lb
11	64804354	1	1	FILLER NECK 400 SERIES
12	64804353	1	1	FILLER CAP, 7 PSI, 400 SERIES
13	455669034	1	1	Hex Nyloc Nut, M10 X 1.5
14	450081030	4	1	Washer, Spring, 16 Mm
15	450081022	12	1	Washer, Spring, 10 Mm
16	450061622	4	1	Washer, Flat, 16 Mm
17	445502935	4	1	Bolt Hex Head, M16 X 35Mm Long
18	445502799	8	1	Bolt Hex Head, M10 X 20Mm Long
19	445402820	1	1	Bolt Hex Head, M10 X 120Mm Long
20	445208842	4	1	SHCS M12 X 25LG GR 8.8

A2U220-230046

**FUEL TANK GROUP**

02-04

REV. 1



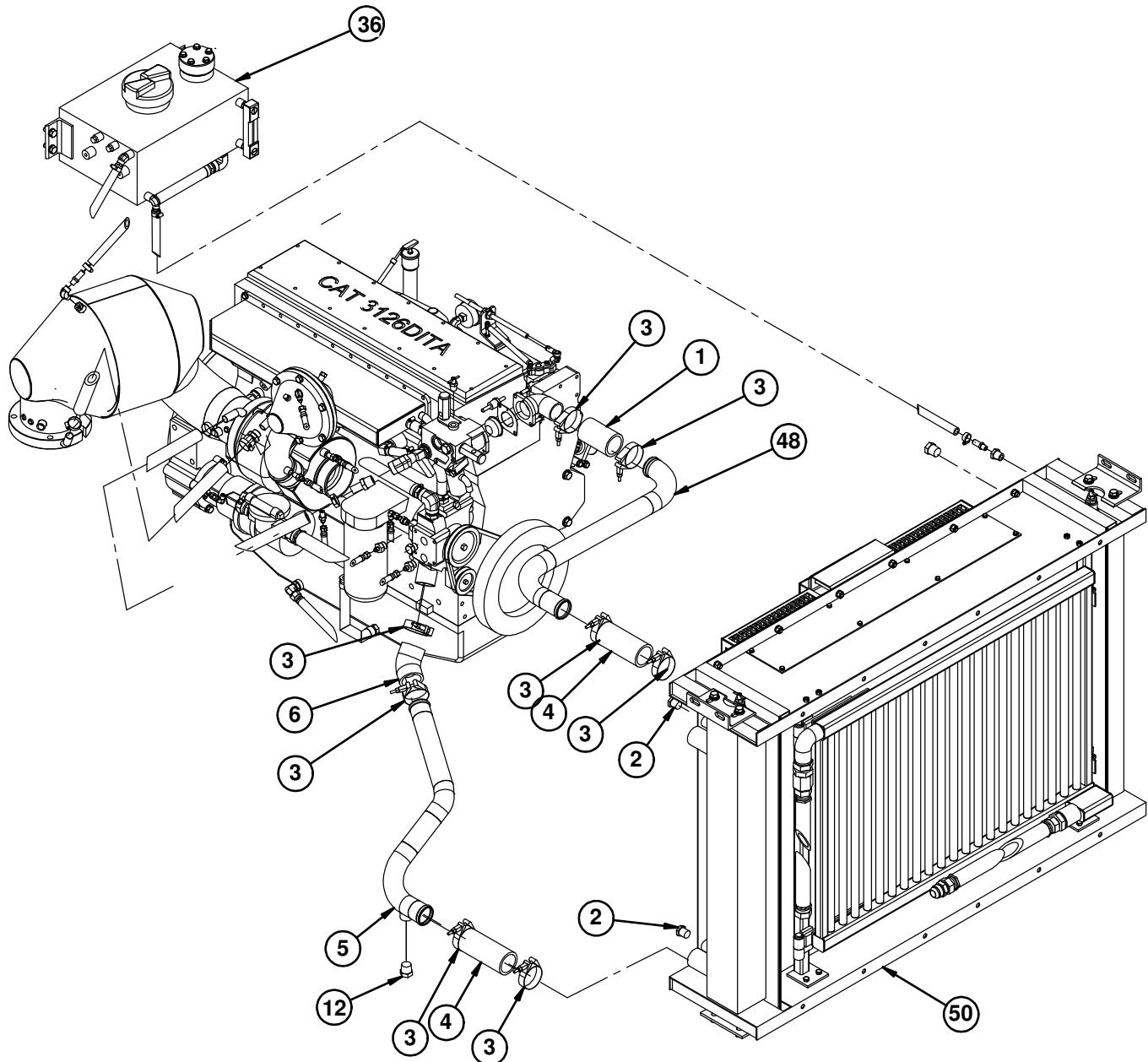
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-04**

Sandvik Underground Mining Flameproof Equipment

**A2U220-230046****FUEL TANK GROUP****02-04****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	912-3072394	1	1	GAUGE-FUEL LEVEL
2	D17-0609	2	1	ELBOW 90 3/8" NPT X 9/16" JIC M/M
3	A2U220-232019	1	1	COVER FUEL TANK
4	A2U900-237005	1	1	AIR VENT
5	A2U900-237004	1	1	QUICK FILL FITTING
6	DA4-2424	1	1	NIPPLE
7	445502939	4	1	CAPSCREW M16 x 50 LG
8	65823042	1	1	FUEL CAP
9	A2U130-238006	1	1	GASKET FUEL TANK
10	A2U900-293002	1	1	EMERGENCY FILL
11	D40-2424	1	1	ELBOW 45 DEG
12	A2U900-392117	10	1	CAPSCREW
13	A2U900-392104	10	1	WASHER, FLAT 10mm SS
14	A2U900-392100	10	1	WASHER, SPRING
15	A2U220-231039	1	1	FUEL TANK
16	450081030	4	1	WASHER, SPRING

**A2U220-260058****ENGINE COOLING GROUP****02-05****REV. 5****ENGINE COOLING GROUP**

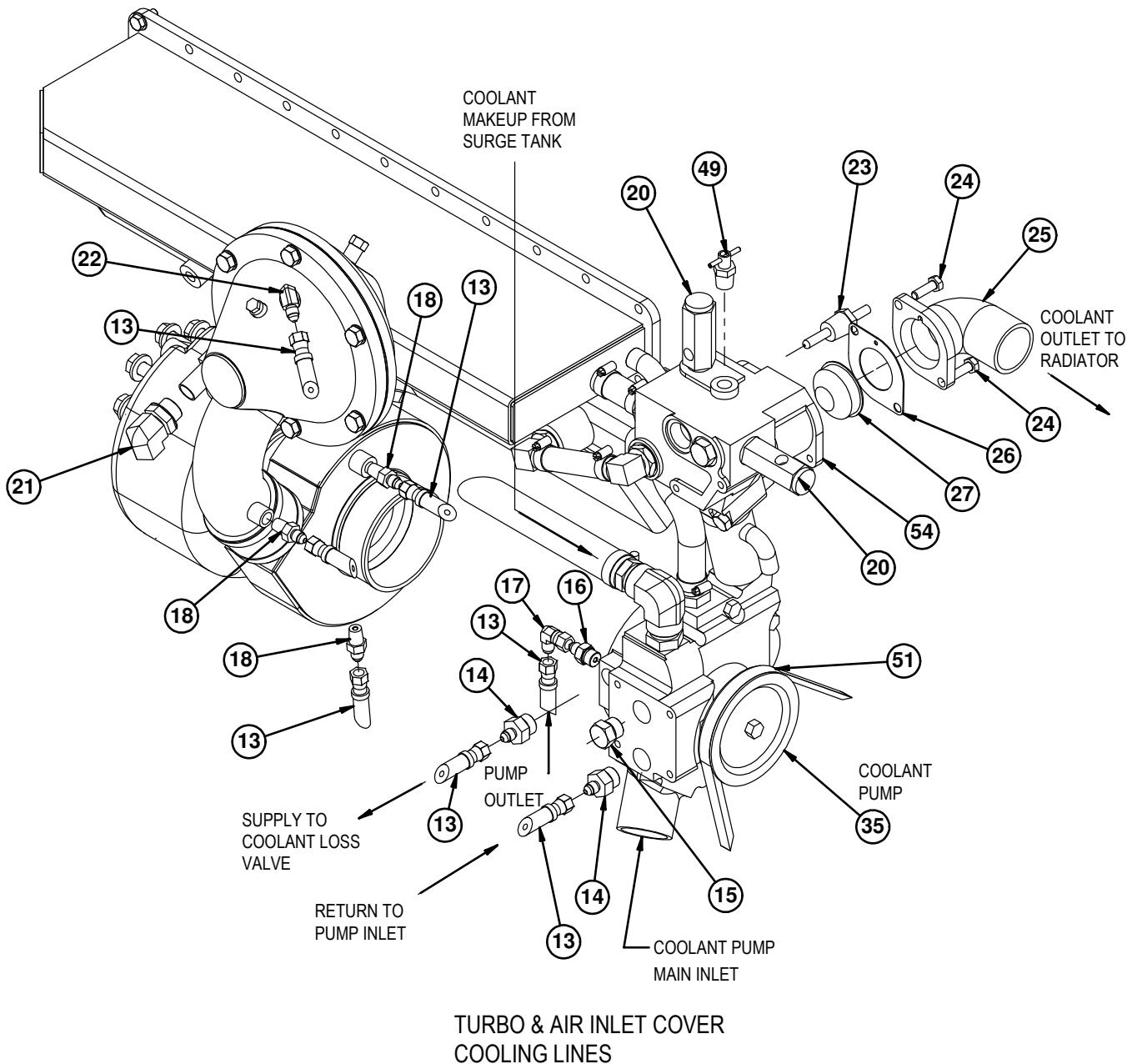
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-260058**

**ENGINE COOLING GROUP**

**02-05**

**REV. 5**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 02-05**

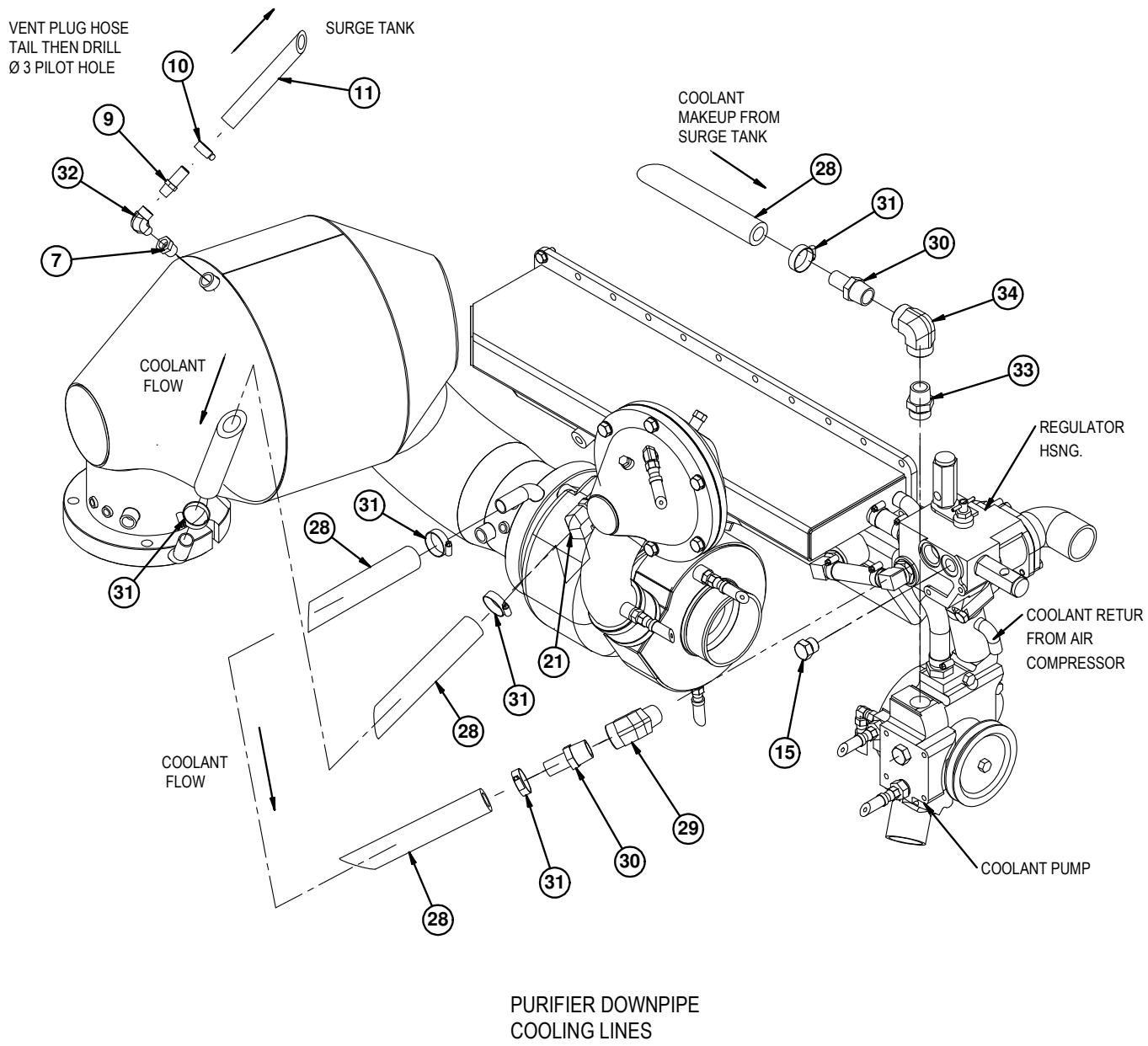
Sandvik Underground Mining Flameproof Equipment

**A2U220-260058**

**ENGINE COOLING GROUP**

**02-05**

**REV. 5**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 02-05**

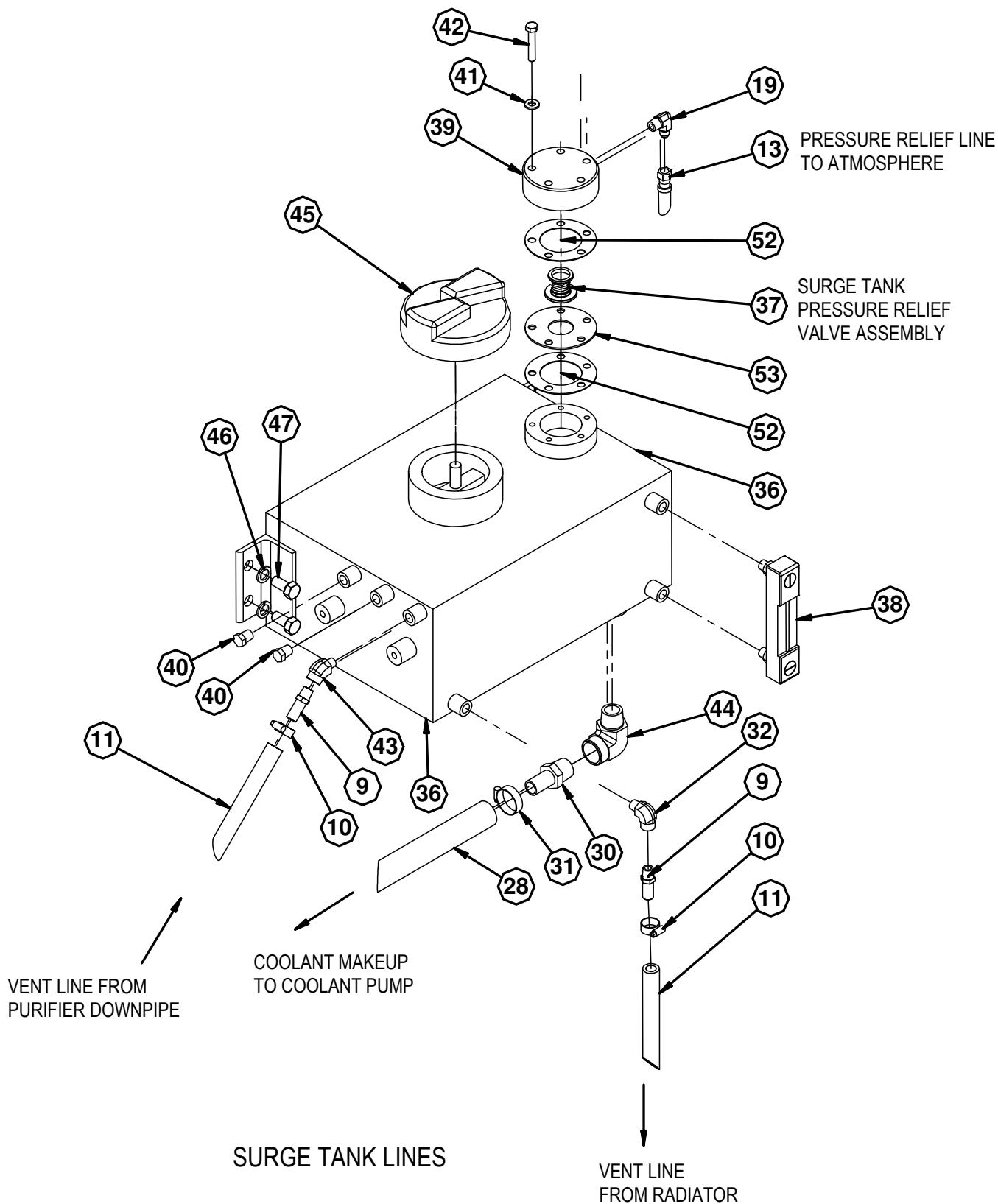
**Sandvik Underground Mining Flameproof Equipment**

A2U220-260058

## ENGINE COOLING GROUP

02-05

REV. 5



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 02-05

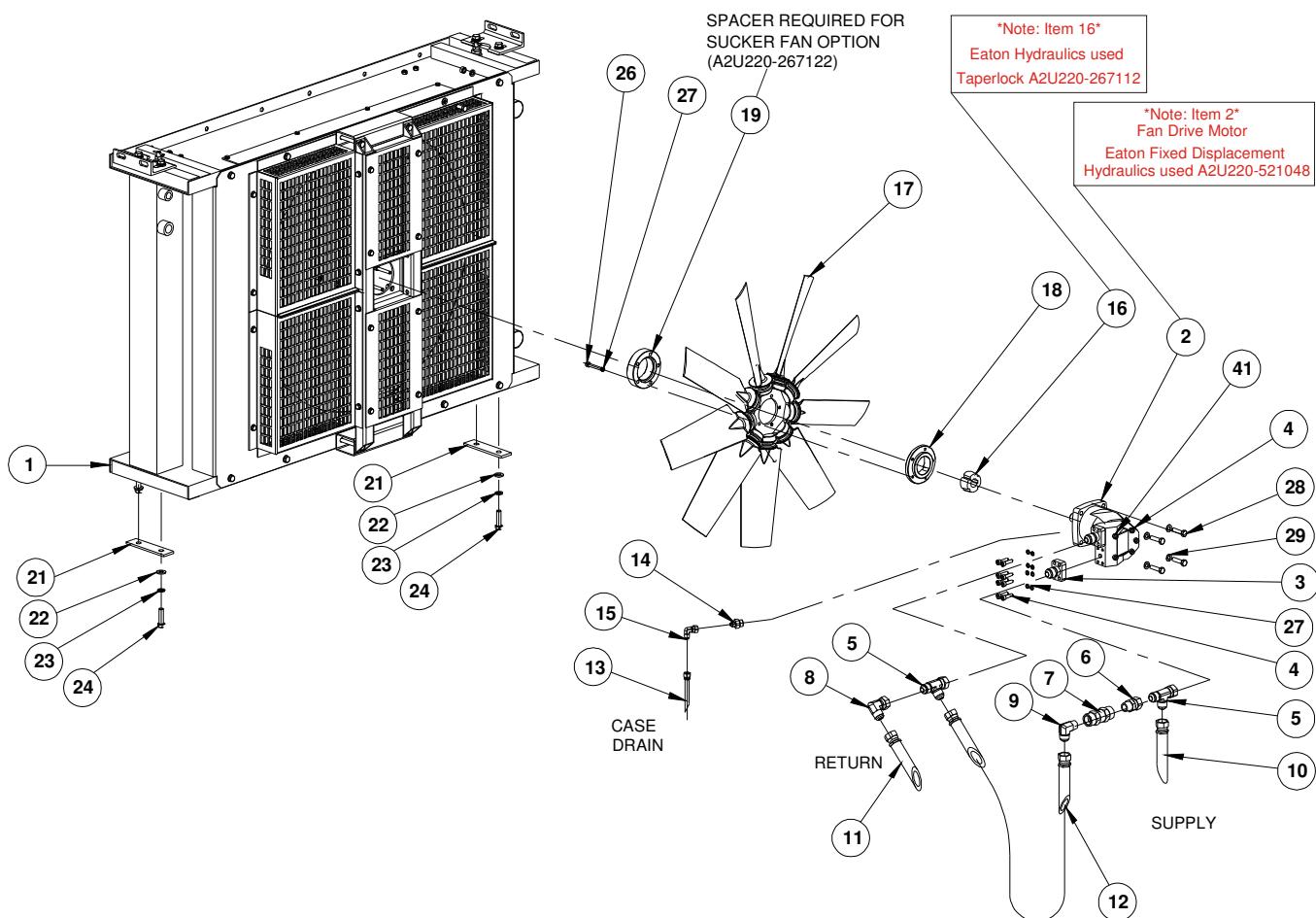
Sandvik Underground Mining Flameproof Equipment

**A2U220-260058****ENGINE COOLING GROUP****02-05****REV. 5**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-265065		1	HOSE, RADIATOR 50.8 ID
2	D60-8		2	PLUG 1/2" NPT
3	D2NP14-8337		8	BOLT CLAMP 2"
4	A2U220-265060		2	HOSE, RADIATOR 50.8 ID
5	A2U220-265058		1	PIPE, RADIATOR
6	A2U900-265105		1	ELBOW 45 DEG., RUBBER 50.8 DIA ID
7	A2U220-265063		1	RESTRICTOR, PURIFIER
9	D110-48		3	HOSE TAIL 1/4" NPT
10	P2FHB		3	HOSE CLAMP 12.5mm ID
11	D115-125		2	HOSE
12	D60-12		1	PLUG 3/4" NPT
13	D605-74		4	HOSE ASSEMBLY, PUSH ON
14	D52 1207		2	NIPPLE UNO_RING - JIC
15	D62-12		2	PLUG UNO_RING
16	D52 87		1	NIPPLE UNO_RING - JIC
17	D50-77		1	ELBOW 90 DEG. SWIVEL
18	D15 47		3	NIPPLE NPT - JIC
19	D17-47		1	ELBOW 90 DEG NPT - NPT
20	A2U900-694090		2	SENTINEL, ENGINE COOLANT
21	A2U220-265064		1	ELBOW, MODIFIED
22	A2U220-241042		1	INLET FLAMETRAP COVER
23	VGB7		1	TEMP SENSOR
24	C2A6V3940		2	BOLT, HEX HD M8
25	A2U220-265061		1	ELBOW, MODIFICATION
26	C2A2W7212		1	GASKET
27	C2A1028392		1	THERMOSTAT
28	D115-19		6	WATER HOSE 19mm ID
29	D39-1212		1	ELBOW 45 DEG NPT - NPT, M/F
30	A2U913-255197		3	HOSE TAIL 3/4" NPT - 19mm OD
31	P2HSS1600N		6	HOSE CLAMP 19mm ID

**A2U220-260058****ENGINE COOLING GROUP****02-05****REV. 5**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
32	D37-44		2	ELBOW 90 DEG NPT - NPT, M/F
33	D95-1712		1	NIPPLE UNO_RING - BSPT
34	D38-1212		1	ELBOW 90 DEG NPT - NPT, F/F
35	C2A1325243		1	COOLANT PUMP
36	A2U900-260073	02-05-03	1	SURGE TANK ASSEMBLY
37	C2A5S1218		1	VALVE ASSEMBLY
38	A2U900-291249		1	GAUGE - FLUID LEVEL
39	A2U936-263005		1	RELIEF CAP
40	D60-4		2	PLUG NPT
41	450081120		1	WASHER, SPRING M8
42	445502767		1	BOLT, HEX HD M8 x 45 LG
43	D39-0404		1	ELBOW 45 DEG NPT - NPT, M/F
44	D37-1212		1	ELBOW 90 DEG NPT - NPT, M/F
45	A2U925-263001		1	FILLER CAP, SURGE TANK
46	450081124		1	WASHER, SPRING M12
47	445502842		1	BOLT, HEX HD M12 x 25 LG
48	A2U220-261077		1	PIPE, RADIATOR
49	P3RVD		1	VALVE
50	A2U220-261072	02-05-01	1	RADIATOR & TRANSMISSION COOLER ASSEMBLY
51	A2U900-267100	02-05-06	1	(A32) VEE BELT (Link to Tech. Bulletin 0722)
52	C2A5S4629		2	GASKET
53	C2A5S1213		1	GASKET
54	A2U220-265055	02-05-04	1	HOUSING, COOLANT REGULATOR
55	C2A2W7212		1	GASKET

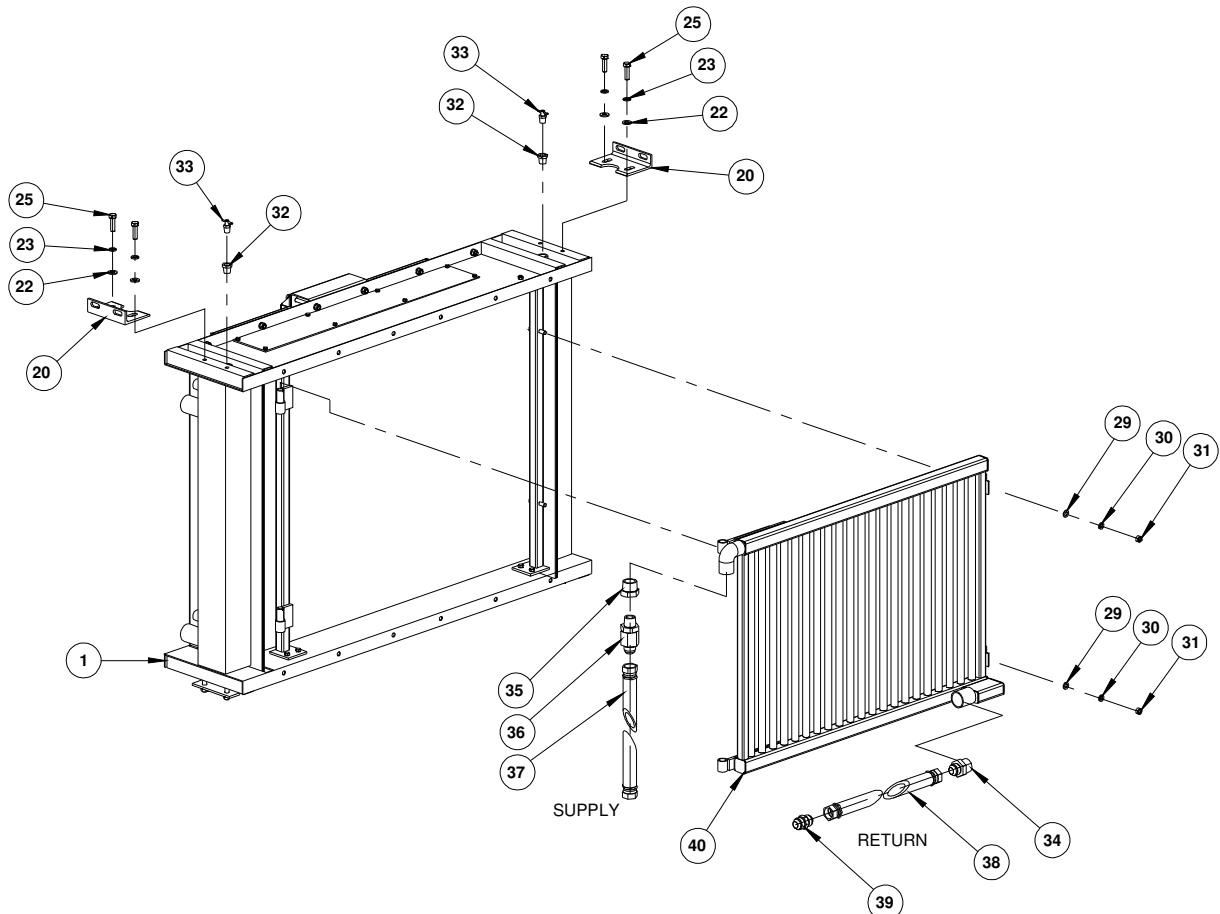
**A2U220-261072**
**RADIATOR/FAN DRIVE ASSEMBLY**
**02-05-01**
**REV. 3**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 02-05-01**
**Sandvik Underground Mining Flameproof Equipment**

A2U220-261072

**RADIATOR/FAN DRIVE ASSEMBLY**

02-05-01

REV. 3



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-05-01**

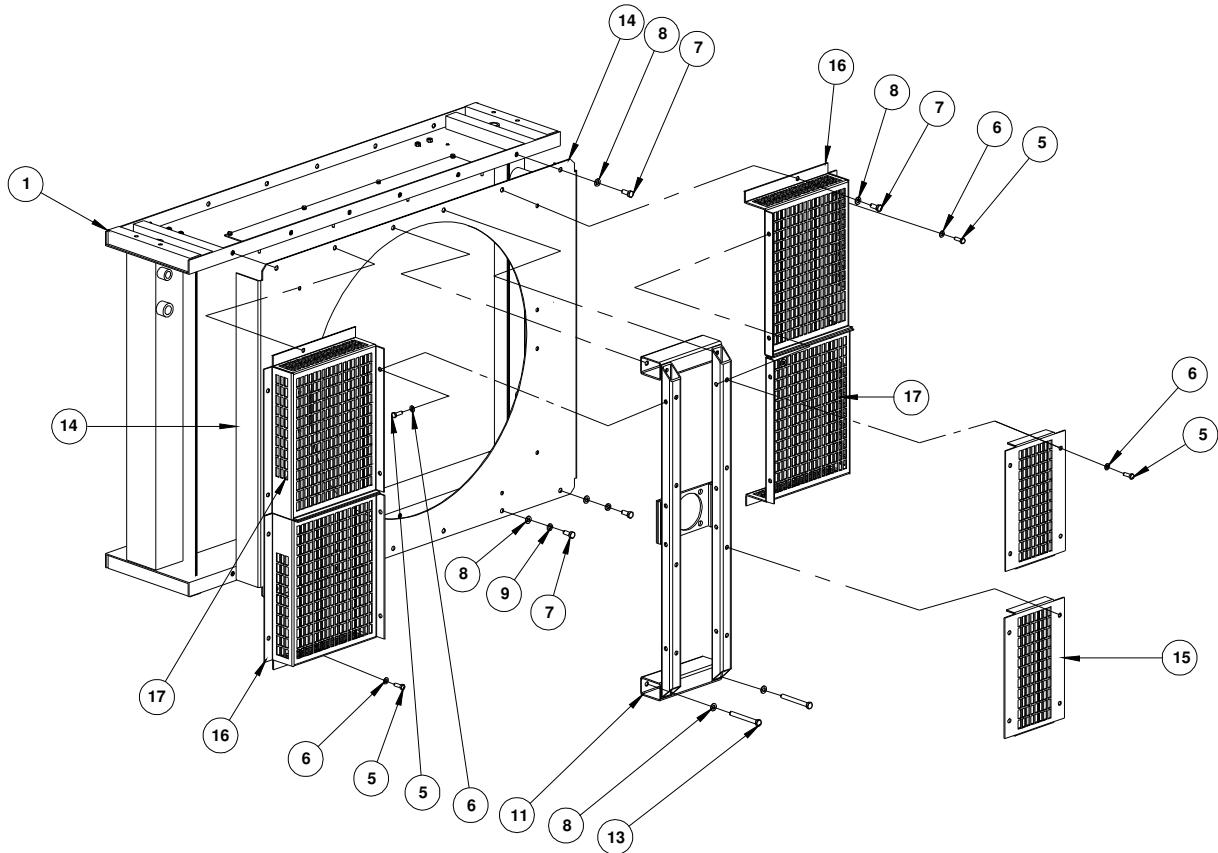
Sandvik Underground Mining Flameproof Equipment

**A2U220-261072**
**RADIATOR/FAN DRIVE ASSEMBLY**
**02-05-01**
**REV. 3**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	A2U220-261078	02-05-01-01	1	RADIATOR ASSEMBLY
2	A2U900-521049		1	MOTOR, FAN DRIVE
3	A2U220-267118		2	MOTOR FLANGE
4	445208762		11	S.H.C.S. M8 x 30 LG
5	DA82-171717		2	TEE PIECE
6	D52-1217		1	ADAPTOR NPT - JIC, M/F
7	A2U220-594468		1	CHECK VALVE
8	D50-1717		1	ELBOW 90 DEG SWIVEL
9	D17-1217		1	ELBOW 90 DEG NPT - JIC
10	D2900-12-140-17		1	HOSE ASSEMBLY
11	D2900-12-230-17		1	HOSE ASSEMBLY
12	D2900-12-70-17		1	HOSE ASSEMBLY
13	D2900-06-400-09		1	HYDRAULIC HOSE
14	D52 1209		1	
15	D50-0909		1	ELBOW 90 DEG SWIVEL
16	A2U450-267115		1	TAPERLOCK BUSH (Parker System)
17	A2U220-267111		1	FAN BLOWER DIA 800 x 9 BLADE
REF	A2U915-267068		9	FAN BLADE BLOWER
18	A2U220-267113		1	BOSS ARTICULATION
19	A2U220-267116		1	SPACER RADIATOR FAN
REF	A2U220-267122		1	FAN SUCKER DIA 800 x 9 BLADE
20	A2U220-1911080		2	BRACKET, TOP RADIATOR SUPPORT
21	A2U220-291237		2	PLATE, KEEPER
22	64404408		8	WASHER, FLAT M12
23	450081124		8	WASHER, SPRING M12
24	445502848		4	BOLT, HEX HD M12 x 45 LG
25	445502847		4	BOLT, HEX HD M12 x 40 LG
26	A2U900-392131		5	S.H.C.S. M8 x 50 LG
27	450081120		18	WASHER, SPRING M8
28	445502806		4	CAPSCREW, HEX HD M10 x 40 LG
29	450062508		6	WASHER, FLAT M10
30	455309034		6	NUT M10
31	455309034		6	NUT M10

**A2U220-261072****RADIATOR/FAN DRIVE ASSEMBLY****02-05-01****REV. 3**

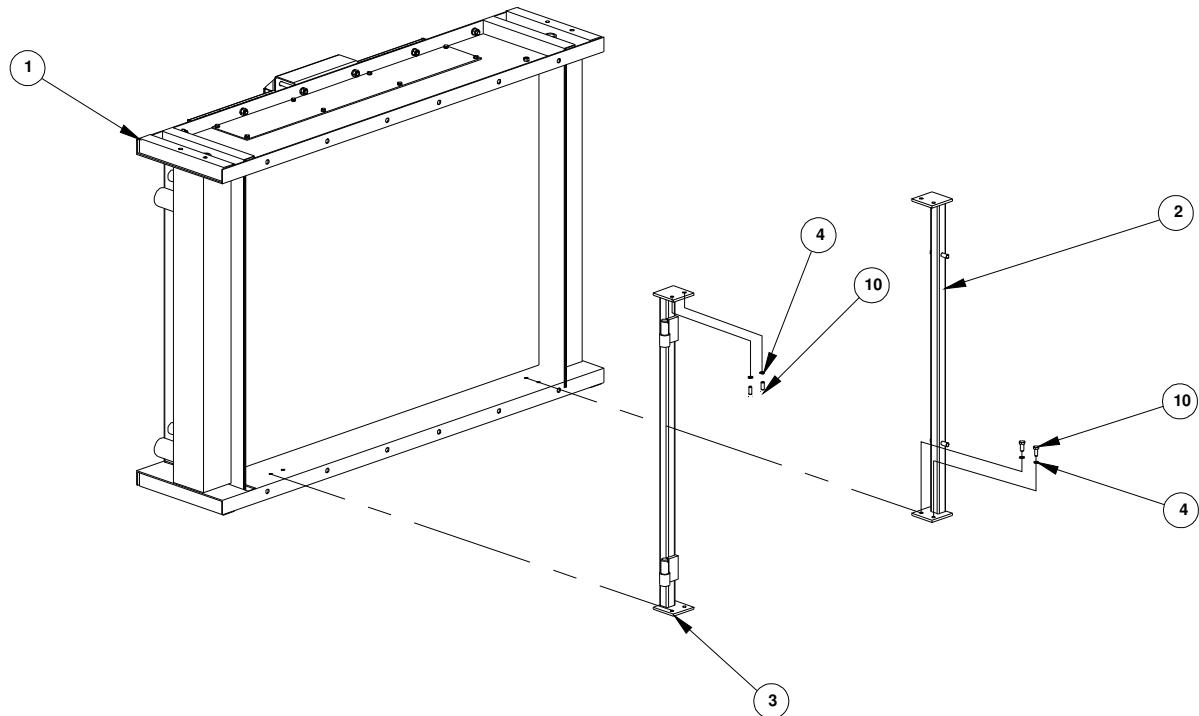
ITEM	PART NO	PAGE	QTY	DESCRIPTION
32	D21-0806		2	REDUCING BUSH NPT - NPT
33	P3RVD		2	VALVE
34	D15-2021		1	NIPPLE NPT - JIC
35	D21-2016		1	REDUCING VALVE NPT - NPT
36	A2U130-596196		1	SWIVEL NIPPLE
37	D2900-16-180-21		1	HOSE ASSEMBLY
38	D2900-16-230-21		1	HOSE ASSEMBLY
39	D16-2121		1	NIPPLE JIC - JIC
40	A2U220-318001		1	COOLER, TRANSMISSION
41	445208770		2	S.H.C.S. M8 x 60 LG

**A2U220-261078****RADIATOR ASSEMBLY, ED10****02-05-01-01****REV. 0**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    02-05-01-01**

Sandvik Underground Mining Flameproof Equipment

**A2U220-261078****RADIATOR ASSEMBLY, ED10****02-05-01-01****REV. 0**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    02-05-01-01**

Sandvik Underground Mining Flameproof Equipment

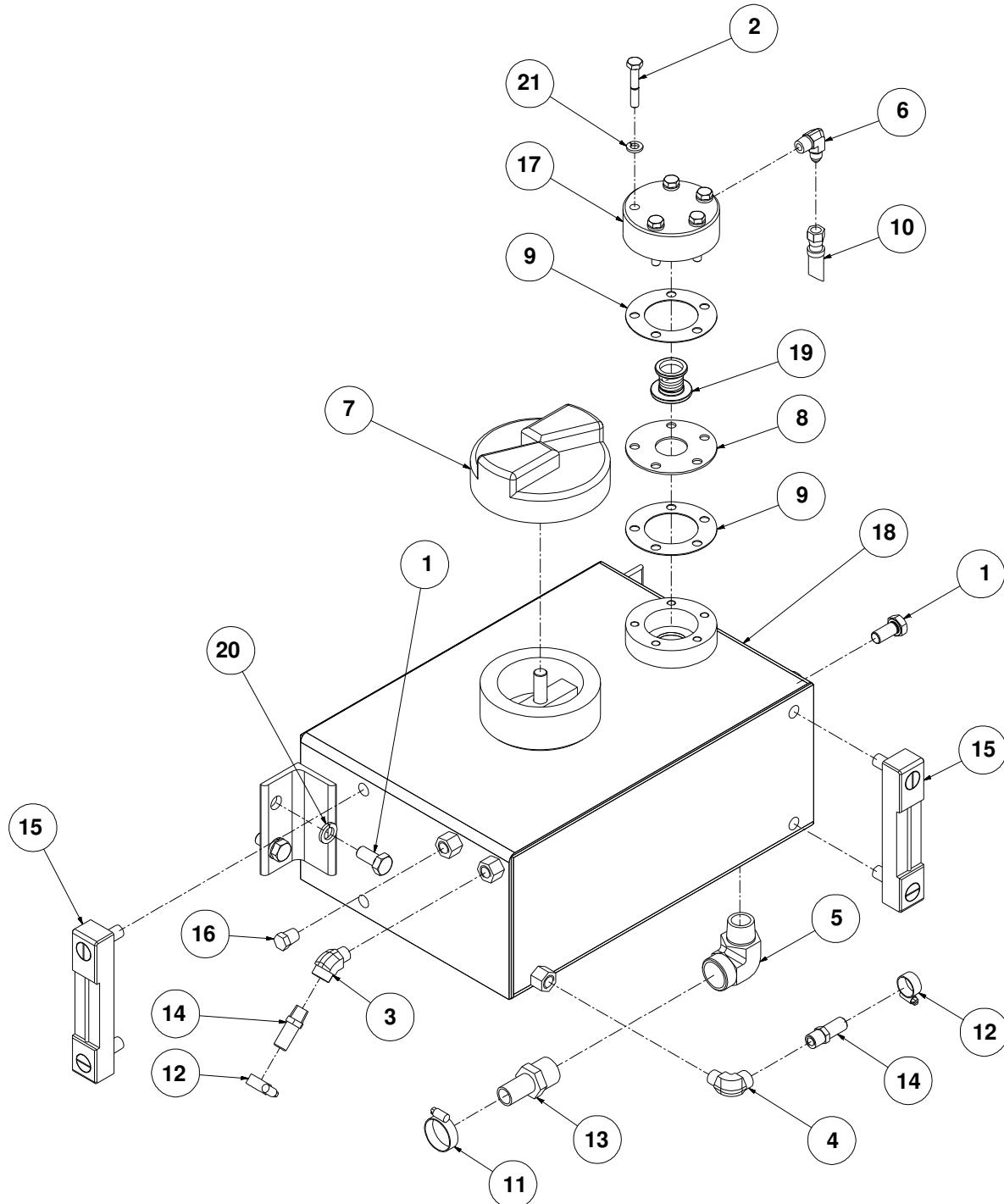
**A2U220-261078****RADIATOR ASSEMBLY, ED10****02-05-01-01****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-261073	1	1	RADIATOR, 3126TA
2	A2U220-262088	1	1	BRACKET, OIL COOLER
3	A2U220-262096	1	1	BRACKET, OIL COOLER
4	450081120	8	8	WASHER, SPRING M8
5	445502761	34	34	BOLT, HEX HD M8 x 25 LG
6	450061617	34	34	WASHER, FLAT M8
7	445502801	8	8	BOLT, HEX HD M10 x 25 LG
8	450062508	18	18	WASHER, FLAT M10
9	L600001136	10	10	WASHER, SPRING M10
10	455309034	10	10	NUT M10
11	A2U220-252046	1	1	MOTOR MOUNT BRACKET
12	445402819	4	4	BOLT, HEX HD M10 x 110 LG
13	L455669034	4	4	NUT, NYLOC M10
14	A2U220-262085	1	1	RADIATOR SHROUD
15	A2U220-262089	2	2	RADIATOR GUARD, CENTRE
16	A2U220-262083	2	2	RADIATOR GUARD, RHS
17	A2U220-262084	2	2	RADIATOR GUARD, LHS

**A2U900-260073**  
**REV. 0**

**SURGE TANK ASSEMBLY**

**02-05-03**



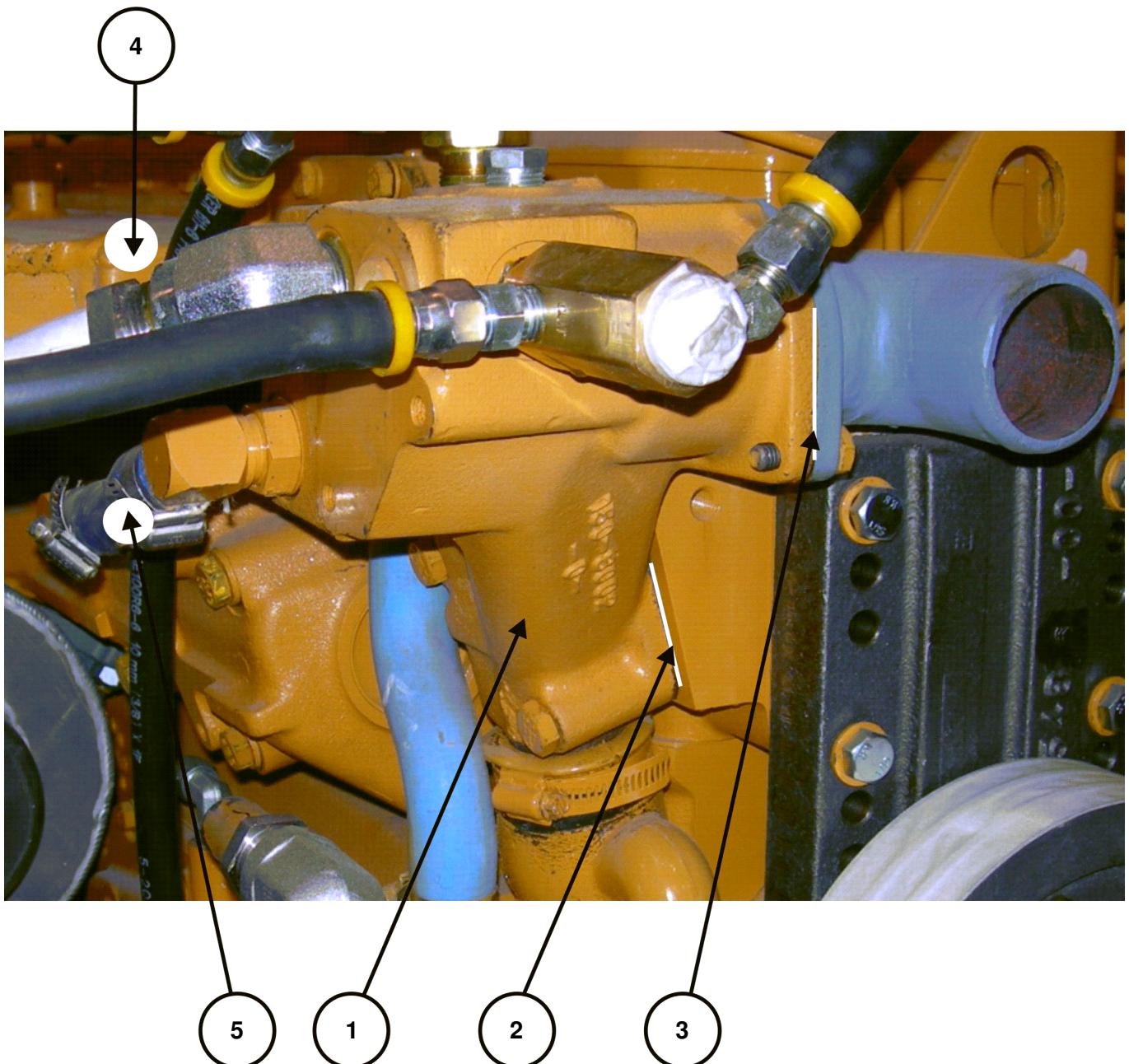
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 02-05-03**

Sandvik Underground Mining Flameproof Equipment

**A2U900-260073****SURGE TANK ASSEMBLY****02-05-03****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502842		5	BOLT, HEX HD M12 x 25 LG
2	445502767		5	BOLT, HEX HD M8 x 45 LG
3	D39-0404		1	ELBOW 45 DEG M/F 1/4" NPT x 1/4" NPT
4	D37-0404		1	ELBOW 90 DEG 1/4" NPT x 1/4" NPT M/F
5	D37-1212		1	ELBOW 90 DEG M/F 3/4" NPT x 3/4" NPT
6	D17-0407		1	ELBOW 90 DEG 1/4" NPT x 7/16" JIC
7	A2U925-263001		1	FILLER CAP LOCKING
8	C2A5S1213		1	DIAPHRAGM PLATE
9	C2A5S4629		2	GASKET
10	D605 74		1	HOSE ASSEMBLY
11	P2HSS1600N		1	HOSE CLAMP 19mm ID HOSE
12	P2FHB		2	HOSE CLAMP 12.5mm ID HOSE
13	A2U913-255197		1	HOSE TAIL 3/4" NPT TO 19mm OD - BRASS
14	D100-48		2	HOSE TAIL 1/4" NPT
15	A2U900-291249		2	HYDRAULIC OIL LEVEL INDICATOR
16	D60-04		1	PLUG 1/4" NPT
17	A2U936-263005		1	RELIEF CAP
18	A2U220-261071		1	SURGE TANK
19	C2A5S1218		1	VALVE ASSEMBLY
20	450081124		4	WASHER, SPRING M12
21	450081120		5	WASHER, SPRING M8

**A2U220-265055****COOLANT REGULATOR****02-05-04****REV. 0**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-05-04**

Sandvik Underground Mining Flameproof Equipment

**A2U220-265055****COOLANT REGULATOR****02-05-04****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-265055	1	1	Housing, Coolant Regulator
2	C2A2W7212	1	1	Gasket-Engine Block
3	C2A9Y1253	1	1	Gasket-Thermostat
4		1	1	19mm Silicon Hose, 70mm Long
5		1	1	16mm Silicon Hose, 120mm Long



A2U900-267100  
REV. 0

## TECHNICAL BULLETIN

02-05-06



## Technical Bulletin

Sandvik Mining & Construction Tomago  
ABN 38 070 973 330  
Old Punt Road  
Tomago NSW 2322  
Australia  
Phone +61 2 4985 2625  
Fax +61 2 49852699

Bulletin Number: TB0722

Date: 15/10/2007

Subject: CAT3126A DITA Water Pump V-Belts

**Purpose**

To advise the industry of a recommended change in V-belts sizes for Sandvik vehicles utilising Cat3126 DITA Diesel Engine Systems.

**Applicable to**

ED6 LHD, ED7 LHD, ED7LP LHD, ED10 LHD, ED25 SH, ED30 SH, ED40 SH.

**Description**

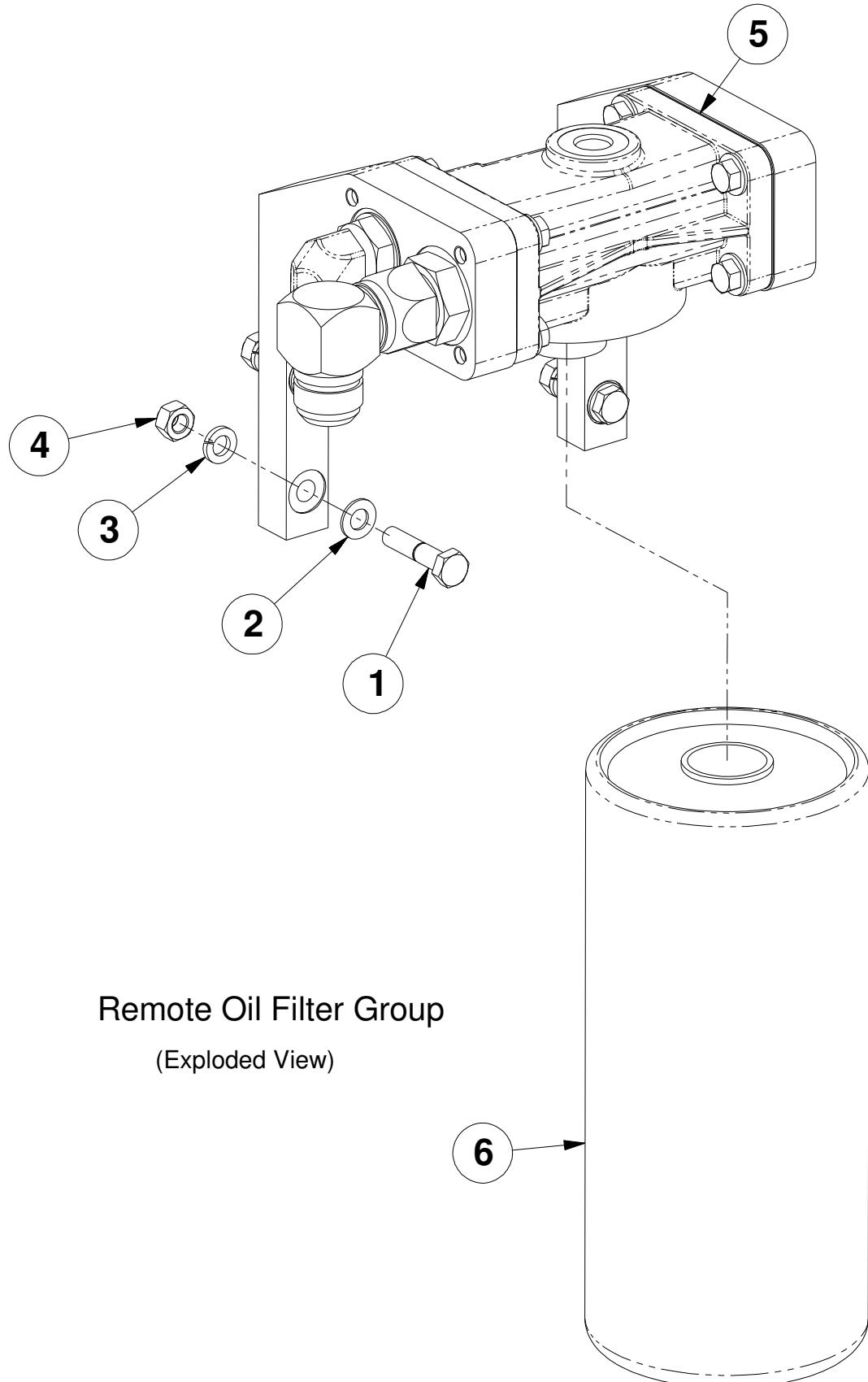
The current AS2784 FRAS V-belts specified for the water pumps on the Sandvik CAT3126A Diesel Engine Systems can be too long when installed, and the belt tensioner requires adjustment to its maximum, or close to its maximum, adjustment. As the belt stretches with use, the belt begins to slip and can cause the engine to overheat and shutdown. Sandvik have trialled smaller sized V-belts and these appear to remedy the fitment problem.

**Changes**

When ordering replacement AS2784 FRAS V-belts for your vehicles, please make the following changes:

Machine	Previously Used	Now Use
ED6, ED7LP, ED25, ED30	A2U900-267100	A2U900-267126
ED7, ED10, ED40	A2U220-267109	A2U900-267100

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

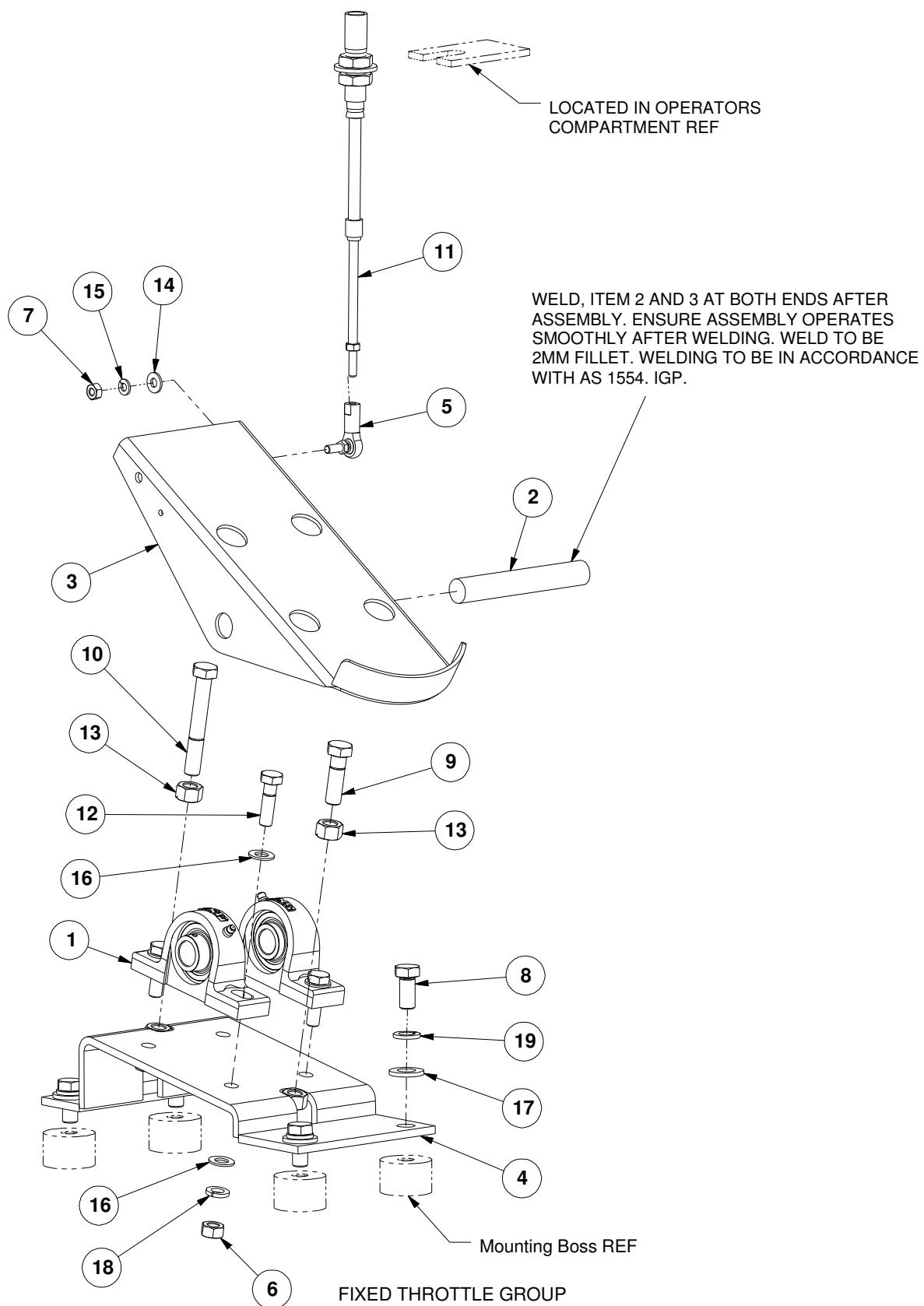
**A2U900-210056****REMOTE OIL FILTER GROUP****02-06****REV. 0****Remote Oil Filter Group**

(Exploded View)

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U900-210056****REMOTE OIL FILTER GROUP****02-06****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502807	4		Bolt Hex Head, M10 X 45Mm Long M10 x 45mm Long
2	450062508	4		Washer, Flat, 10 Mm 10 mm
3	450081022	4		Washer, Spring, 10 Mm 10 mm
4	455669034	4		Hex Nyloc Nut, M10 X 1.5 M10 X 1.5
5	C2A127-4761	1		Filter Gp - Engine Oil
6	C2A1R-0716	1		Cartridge, Oil Filter
*	BD00001613	1		Bracket LH (LS190 only) Not Shown
**	BD00001614	1		Bracket RH (LS190 only) Not Shown

**A2U220-430031**
**PEDAL ASSY., FIXED THROTTLE  
GROUP**
**02-07**
**REV. 4**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**PEDAL ASSY., FIXED THROTTLE  
GROUP**

02-07

**A2U220-430031****REV. 4**

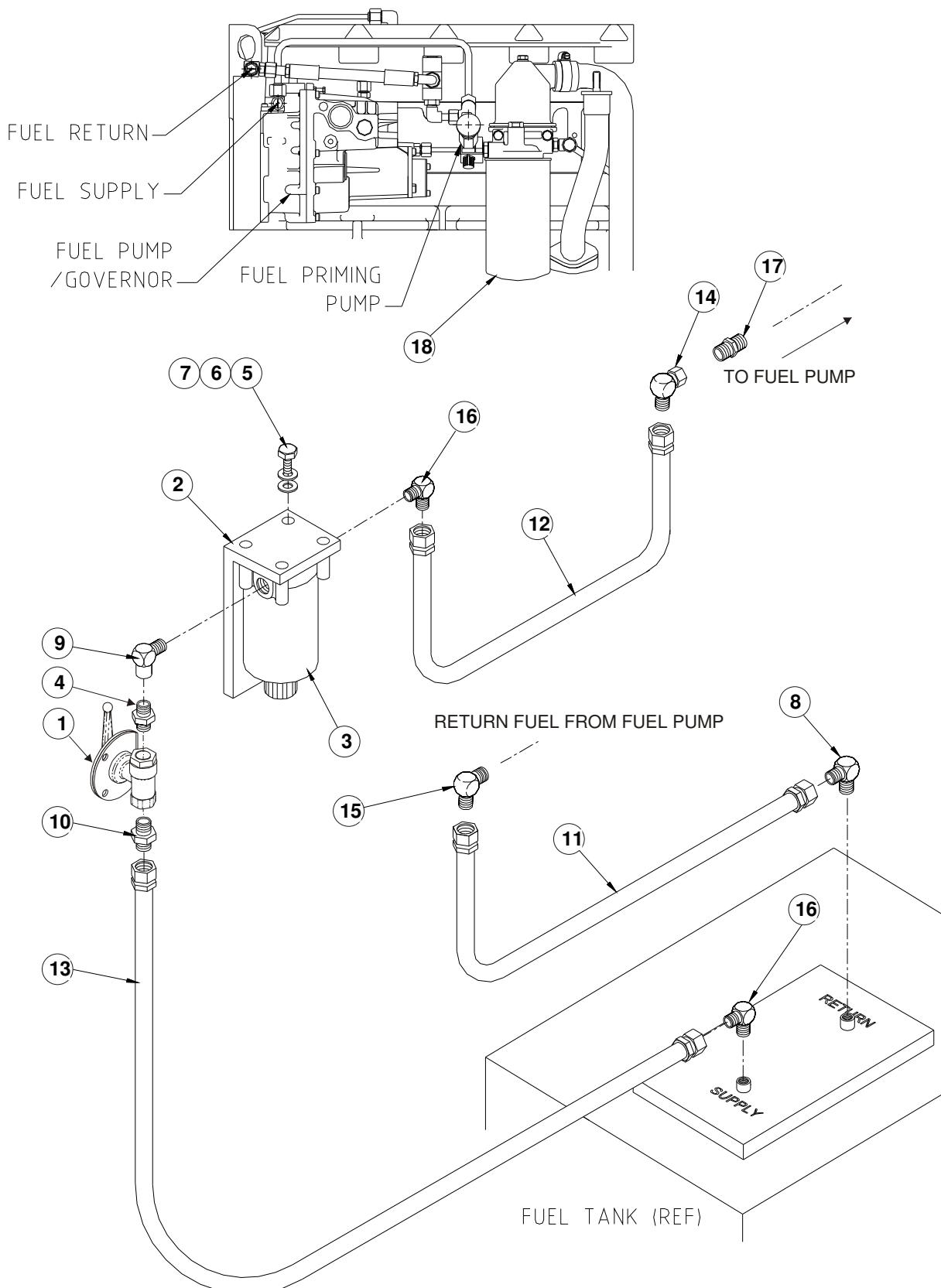
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	G768		2	Bearing
2	911-14026		1	Pin-Throttle Pedal
3	915-26020		1	Throttle Pedal
4	A2U220-591347		1	Mount Assy-Throttle Pedal
5	64400369		1	Unf Ball Joint Rod End 1/4"
6	455309034		4	Hex Nut M10 X 1.5
7	T4HG		1	Unf Hex Nut 1/4-20
8	445502842		4	Bolt Hex Head M12 x 25mm Long
9	445502847		1	Bolt Hex Head M12 x 40mm Long
10	445402855		1	Bolt Hex Head M12 x 80mm Long
11	915-26018		1	Throttle Cable
12	445512804		4	Bolt Hex Head M10 x 35mm Long
13	455309036		2	Hex Nut M12 X 1.75
14	W4GA		1	Plain Washer 1/4 Dia, Narrow
15	W4GF		1	Spring Washer 1/4 Dia
16	450062508		8	WASHER, FLAT 10 mm
17	450061619		4	Washer, Flat 12 mm
18	450081022		4	Washer, Spring 10 mm
19	450081124		4	Washer, Spring 12 mm

**A2U220-230048**

**FUEL LINES GROUP**

**02-08**

**REV. 1**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

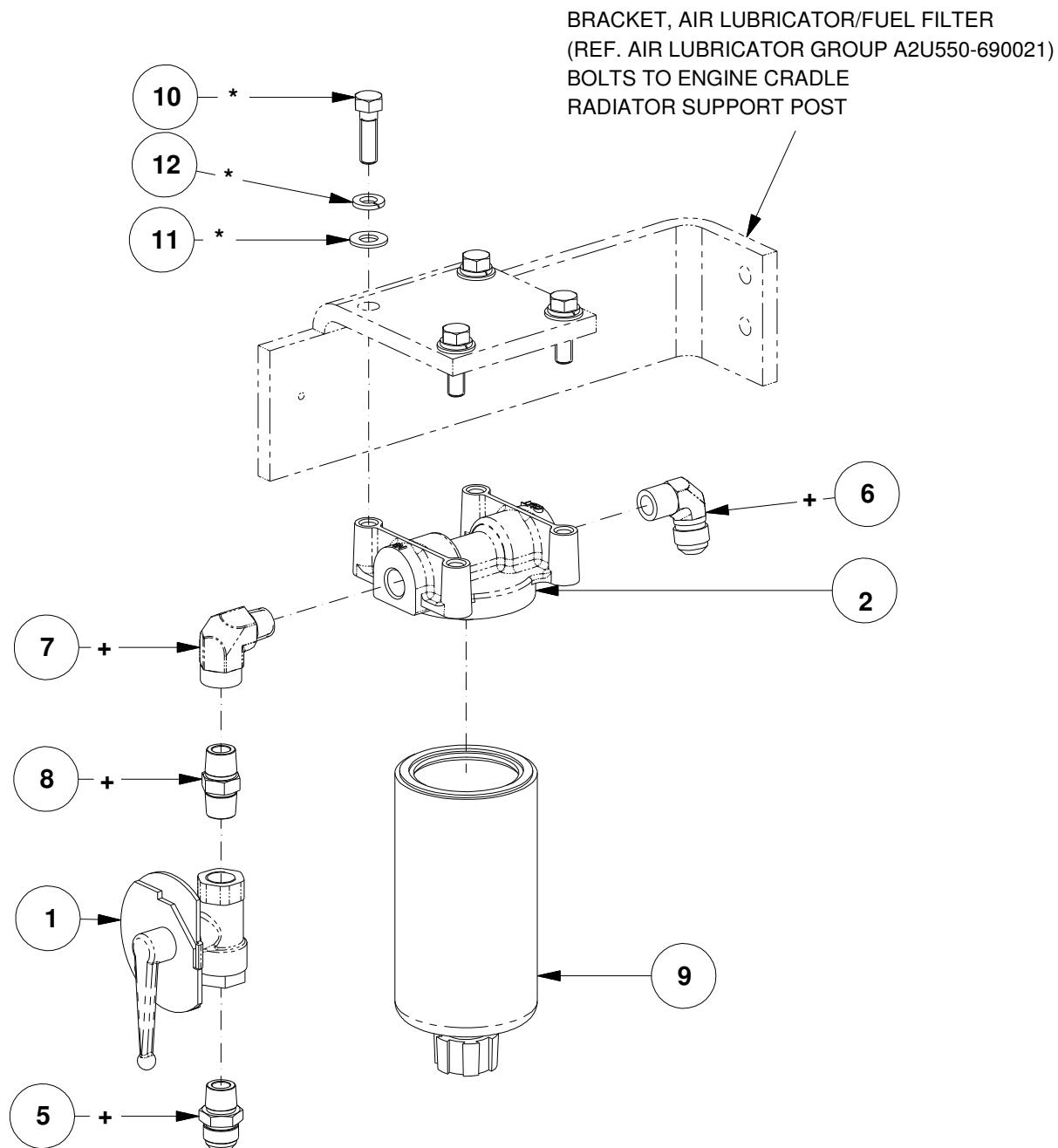
**SECTION 02-08**

**Sandvik Underground Mining Flameproof Equipment**

**A2U220-230048****FUEL LINES GROUP****02-08****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-221048		1	VALVE, MINI BALL LOCKABLE FUEL ISOLATION
2	A2U130-235014		1	FILTER BRACKET
3	A2U921-292005-1	02-08-01	1	FUEL FILTER GROUP
4	BD00003296		1	STRAIGHT ADAPTER 3/8" BSPP-9/16" JIC M/F
5	W6GA		4	WASHER, FLAT
6	T6GG20		4	CAPSCREW
7	W6GF		4	WASHER, SPRING
8	D17-612		1	ELBOW
9	D170609		1	ELBOW
10	D256-0609		1	FITTING
11	D2900-6-45-12		1	HOSE ASSEMBLY
12	D2900-6-55-12		1	HOSE ASSEMBLY
13	D2900-6-55-12		1	HOSE ASSEMBLY
14	D50-99		1	ELBOW
15	D53-912		1	ELBOW
16	D17-69		2	ELBOW
17	D52-99		1	NIPPLE
18	C2A1R0751		REF	FUEL FILTER, SECONDARY

**A2U921-292005**  
**REV. 1**

**FUEL FILTER GROUP, TS350****02-08-01**

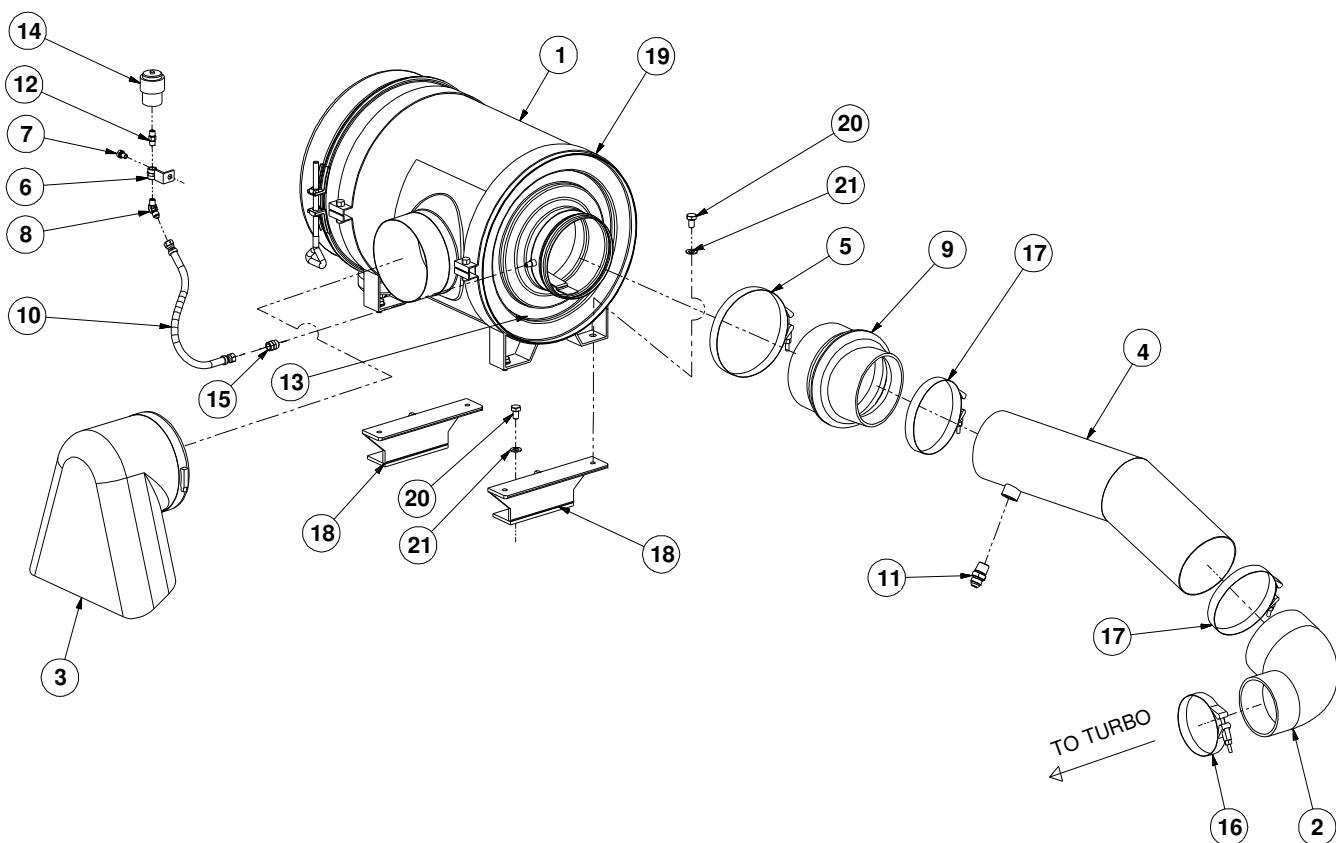
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-08-01**

Sandvik Underground Mining Flameproof Equipment

**A2U921-292005****FUEL FILTER GROUP, TS350****02-08-01****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-221048	1		Fuel Ball Valve Lockable
2	A2U921-291113	1		HEAD, FUEL FILTER
*	BD00012381	1		Fastener Kit
+	BD00012382	1		Fitting Kit
5	D15-0612+	1		Nipple, 3/8" NPT x 3/4" JIC
6	D17-0612+	1		Elbow 90, 3/8" NPT x 3/4" JIC M/M
7	D37-0606+	1		Elbow 90, 3/8" NPT x 3/8" NPT M/F
8	DA4-0606+	1		Nipple, 3/8" NPT x 3/8" NPT
9	F3GFS1221	1		FUEL FILTER
10	T6GG20*	4		3/8-16 X 1 1/4 Hex Head Bolt
11	W6GA*	4		Plain Washer, 3/8 Dia, Narrow
12	W6GF*	4		Spring Washer, 3/8 Dia

**A2U220-240058  
REV. 2****AIR INTAKE ED10****02-10**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-10**

Sandvik Underground Mining Flameproof Equipment

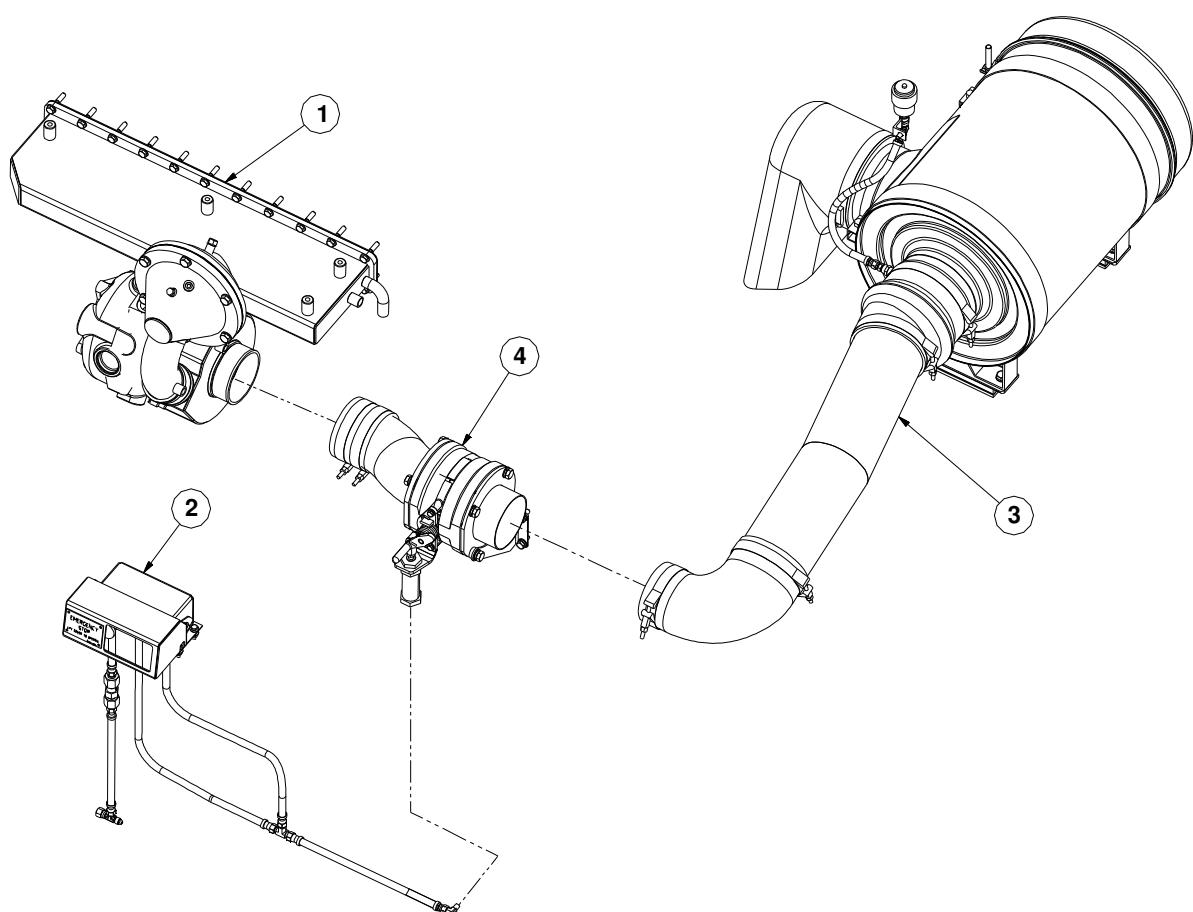
**A2U220-240058****AIR INTAKE ED10****02-10****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-242017	02-10-09-01	1	Air Filter
	F3GAH19072	02-10-08-01-01	1	Air Cleaner Assembly
2	D2NP12-1482		1	Elbow 90 deg
3	D2NX00-4995		1	Air Inlet Ram
4	A2U220-244080		1	Air Intake Pipe
5	D2NP14-8347		1	Bolt Clamp 6"
6	A2U220-244082		1	Bracket Restriction Indicator
7	445502751		1	Bolt Hex Hd. M8 x 12mm
8	D41-0207		1	Elbow 45, 1/8" NPT x 7/16" JIC
9	D2NP11-2611		1	Hump Reducer 6" to 5"
10	D600-04-30-07		1	Hose Assembly 7/16" JIC x 1/14" Hose
11	D15-0812		1	Nipple 1/2" NPT x 3/4" JIC
12	DA4-0202		1	Nipple 1/8" NPT x 1/8" NPT
13	D15-0207		1	Nipple 1/8" NPT x 7/16" JIC
14	DORBX00-2252		1	Restriction Indicator
15	D67-02		1	Socket 1/8" NPT
16	D2NP14-8343		2	T-Bolt Clamp 4" ID
17	D2NP14-8345		2	Bolt Clamp 5"
18	A2U220-291226		2	Mount Air Cleaner
19	D2NH00-0350		2	Mounting Band
20	445502795		8	Bolt Hex Hd. M10 x 16mm
21	450062508		8	Washer Flat, 10mm

**A2U220-240076**  
**REV. 5**

**AIR INTAKE - SHUT DOWN GROUP  
ED10 + STRANGLER**

**02-10**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 02-10**

**Sandvik Underground Mining Flameproof Equipment**

**AIR INTAKE - SHUT DOWN GROUP  
ED10 + STRANGLER**

02-10

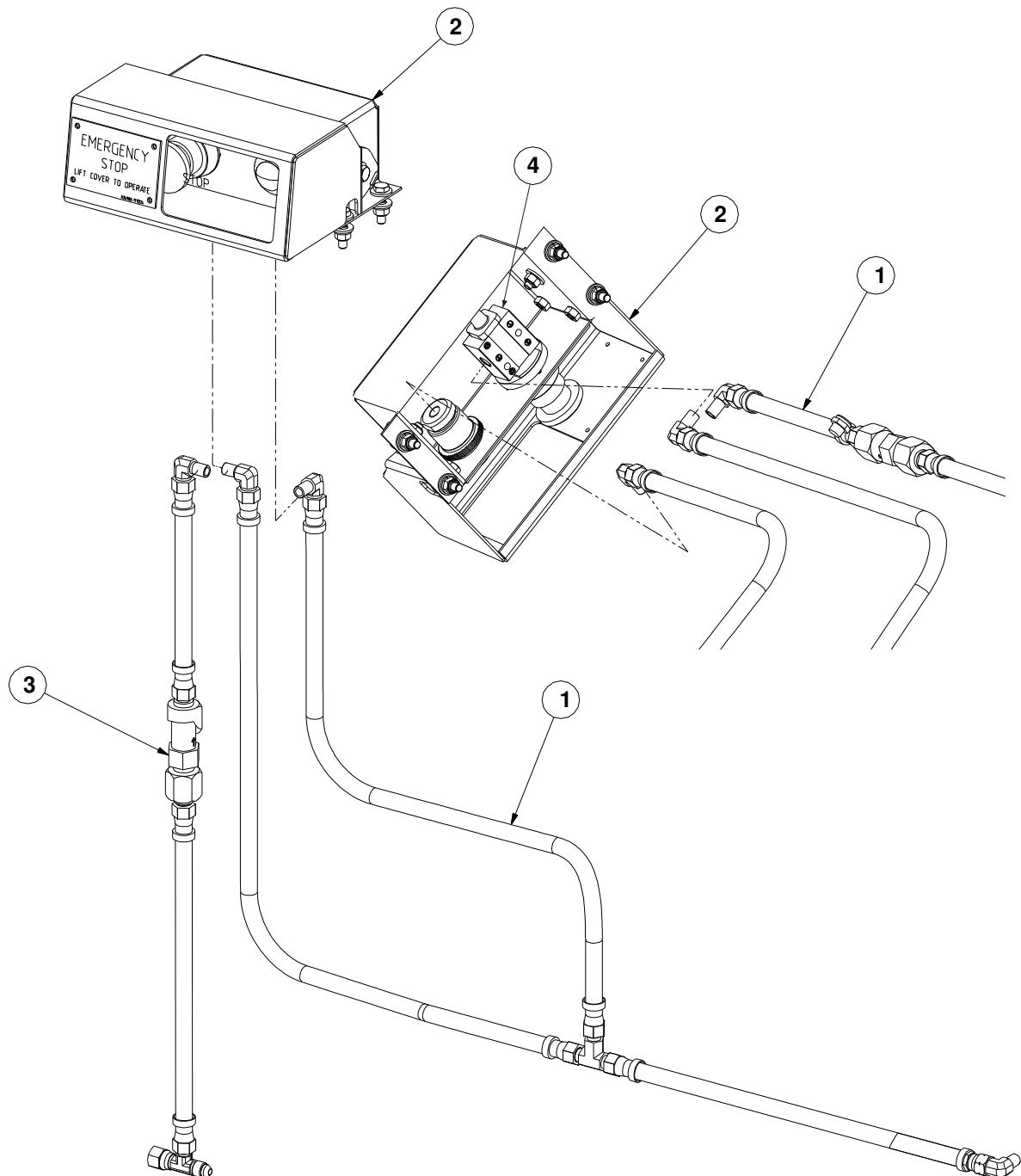
**A2U220-240076****REV. 5**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U130-240084	02-10-05	1	Flame Trap Assembly
2	A2U130-690024	02-10-02	1	Pneumatic Group
3	A2U220-240058	02-10-09	1	Air Intake ED10
4	A2U220-240072-5	02-10-03	1	Air Intake - Shutdown Group

**A2U130-690024**  
**REV. 2**

**PNEUMATIC GROUP, AIR INTAKE -  
SHUT DOWN**

**02-10-02**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 02-10-02**

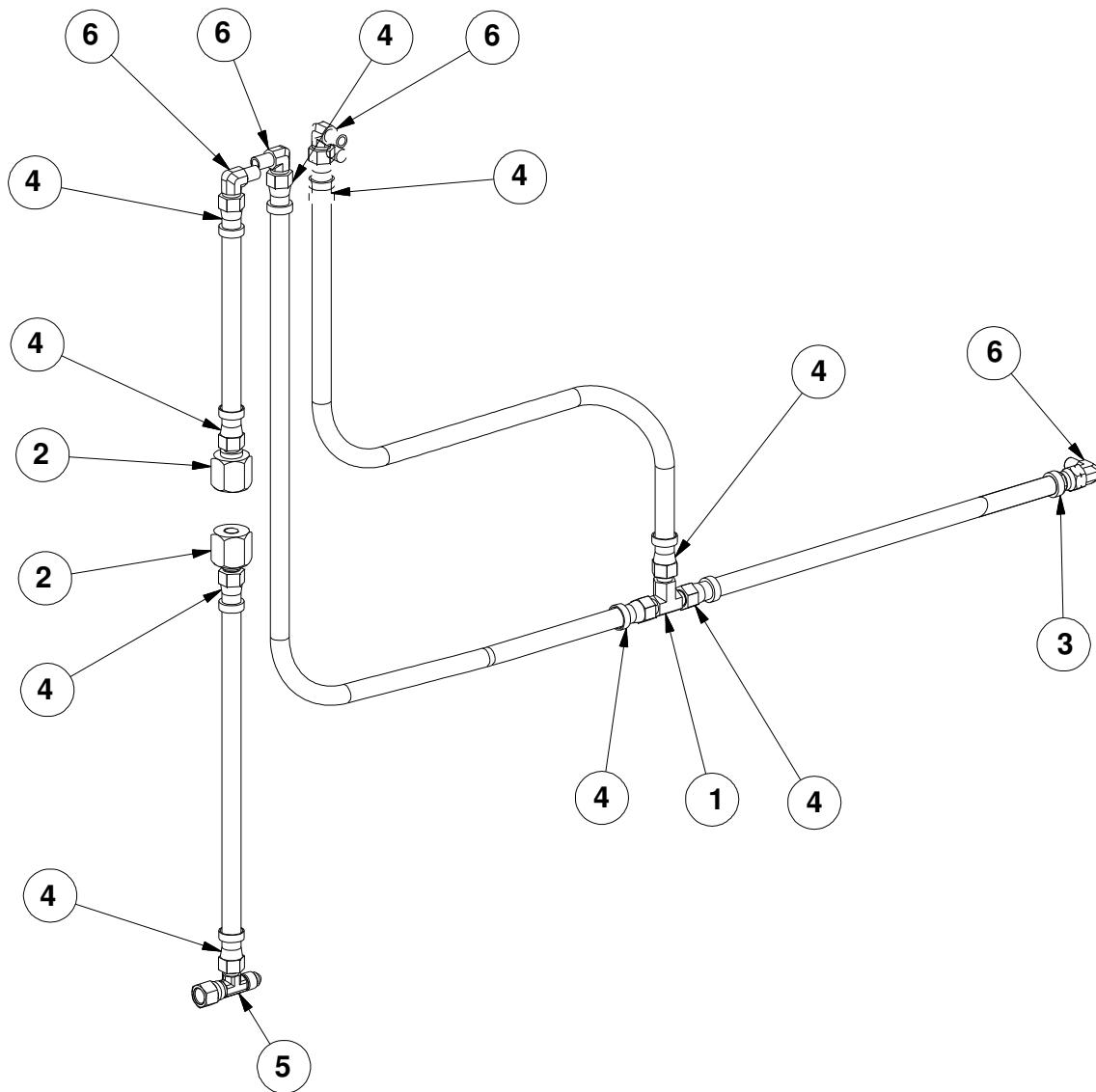
**Sandvik Underground Mining Flameproof Equipment**

**PARTS MANUAL****PNEUMATIC GROUP, AIR INTAKE -  
SHUT DOWN**

02-10-02

**A2U130-690024****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-244100	02-10-02-01	1	Hose & Fittings Group
2	A2U900-470070-3	02-10-02-02	1	Air Shut Down Control Group
3	A2U900-694015		1	Non Return Valve
4	AFP1009-9		1	Air Silencer 1/8" NPT

**A2U900-244100  
REV. 4****HOSE & FITTING, AIR INTAKE -  
SHUT DOWN GROUP****02-10-02-01**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

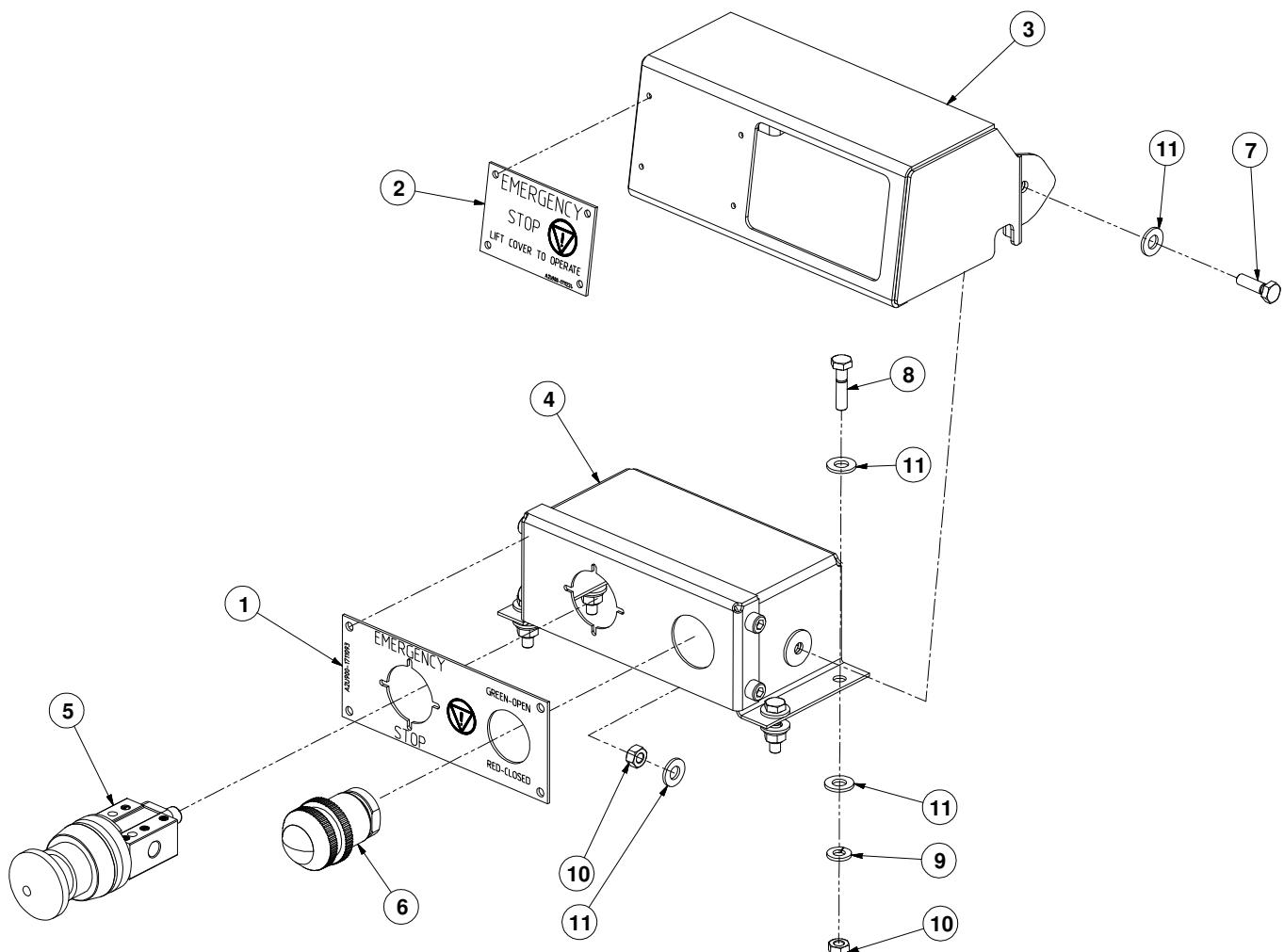
**SECTION    02-10-02-01**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****HOSE & FITTING, AIR INTAKE -  
SHUT DOWN GROUP****02-10-02-01****A2U900-244100****REV. 4**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	D20-070707		1	Tee 7/16" JIC M/M/M
2	D36-0207		2	Reducer 1/8" BSPT x 7/16" JIC F/M
3	D600-04-500-07		1	Hose Assy 7/16" JIC x 1/4" Hose
4	D605-0704		9	Hose End, Low Pressure
5	DA82-070707		1	Tee 7/16" JIC x 7/16" JIC x 7/16" JIC F/M/M
6	DB17-0207		4	Elbow 90 1/8" BSPT x 7/16" JIC M/M

NOTE:- Hoses are to be cut to length from Item 3(1/4" Hose  
x 5m Long.) On Installation.

**A2U900-470070****AIR SHUT DOWN CONTROL GRP.****02-10-02-02****REV. 3**

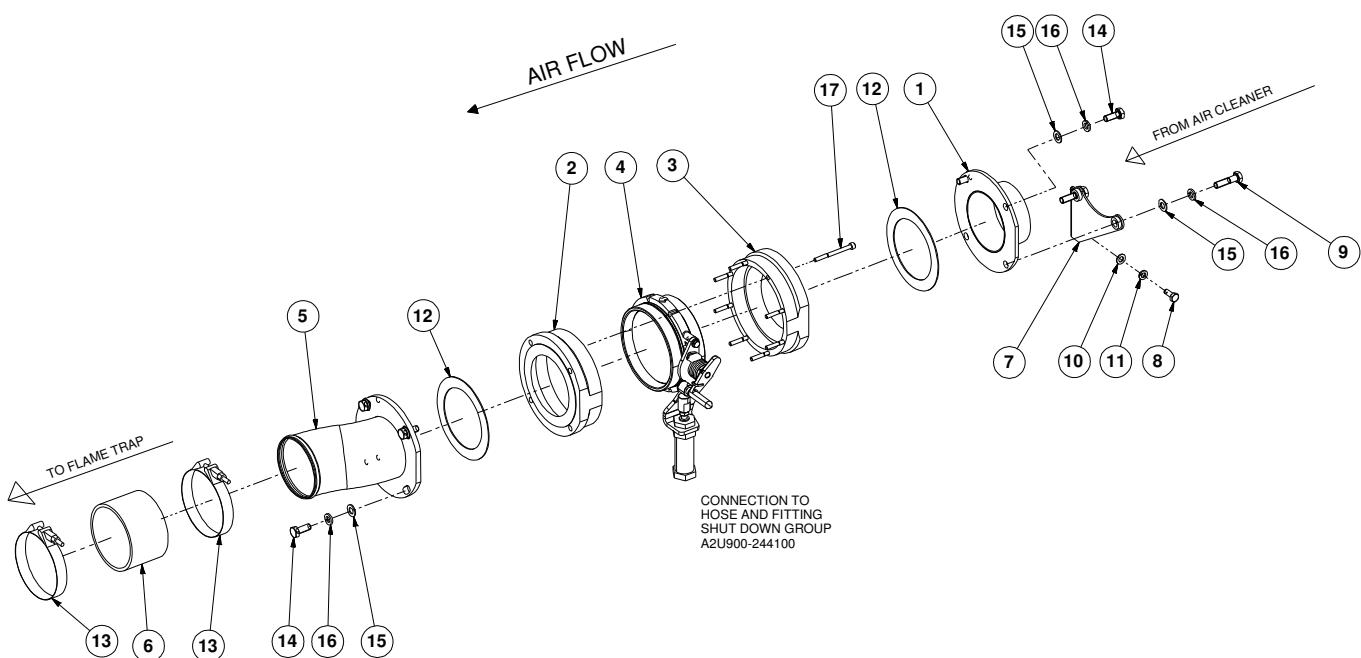
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    02-10-02-02**

Sandvik Underground Mining Flameproof Equipment

**A2U900-470070****AIR SHUT DOWN CONTROL GRP.****02-10-02-02****REV. 3**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-1711093	1	1	Name Plate - Emergency Stop
2	A2U900-1711224	1	1	Name Plate
3	A2U900-1971144	1	1	Cover-Air Shut Down Control
4	A2U900-197941	1	1	Strangler Valve Control Box
5	A2U900-594615	1	1	Push Button Valve
6	A2U936-690011	1	1	Lens Indicator
7	445502660	2	1	Bolt Hex Head, M6 x 20mm
8	445502662	4	1	Bolt Hex Head, M6 x 25mm
9	450081116	4	1	Washer, Spring, 6 mm
10	455669026	6	1	Hex Nyloc Nut, M6 X 1
11	450062504	12	1	Washer, Flat, 6 mm

**A2U220-240072  
REV. 5****AIR INTAKE LINE****02-10-03**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-10-03**

Sandvik Underground Mining Flameproof Equipment

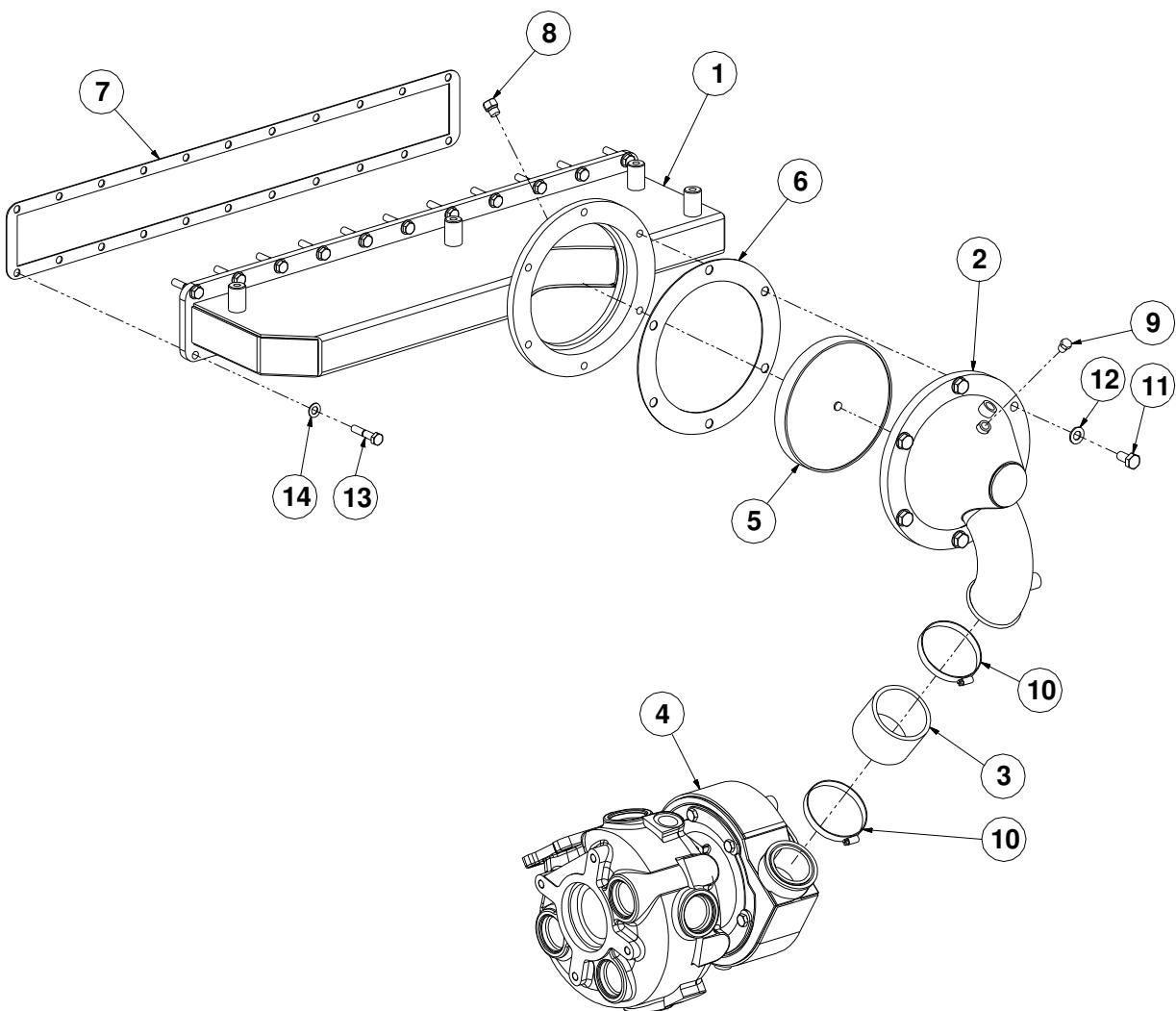
**A2U220-240072****AIR INTAKE LINE****02-10-03****REV. 5**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-244096		1	Inlet Adaptor
2	A2U900-241052		1	Outlet Housing
3	A2U900-241055		1	Inlet Housing
4	A2U900-241058	02-10-07-01	1	Shut Down Valve
5	A2U900-244094		1	Outlet Adaptor
6	A2U900-244098		1	Connector Sleeve 4"
7	A2U900-291270		1	Mounting Bracket - Shut Down Valve
8	445502759		2	Bolt Hex Head M8 x 20mm Long
9	445502806		2	Bolt Hex Head M10 x 40mm Long
10	450062506		2	Washer, Flat 8 mm
11	450081120		2	Washer, Spring 8 mm
12	A2U900-243017		2	Gasket
13	D2NP14-8343		2	T-Bolt Clamp 4" I.D.
14	445502801		6	Bolt Hex Head M10 x 25mm Long
15	450062508		8	Washer, Flat 10 mm
16	450081022		8	Washer, Spring 10 mm
17	A2U900-196182		8	SHCS M6 X 70LG

A2U130-240084  
REV. 1

**FLAME TRAP ASSEMBLY**

02-10-05



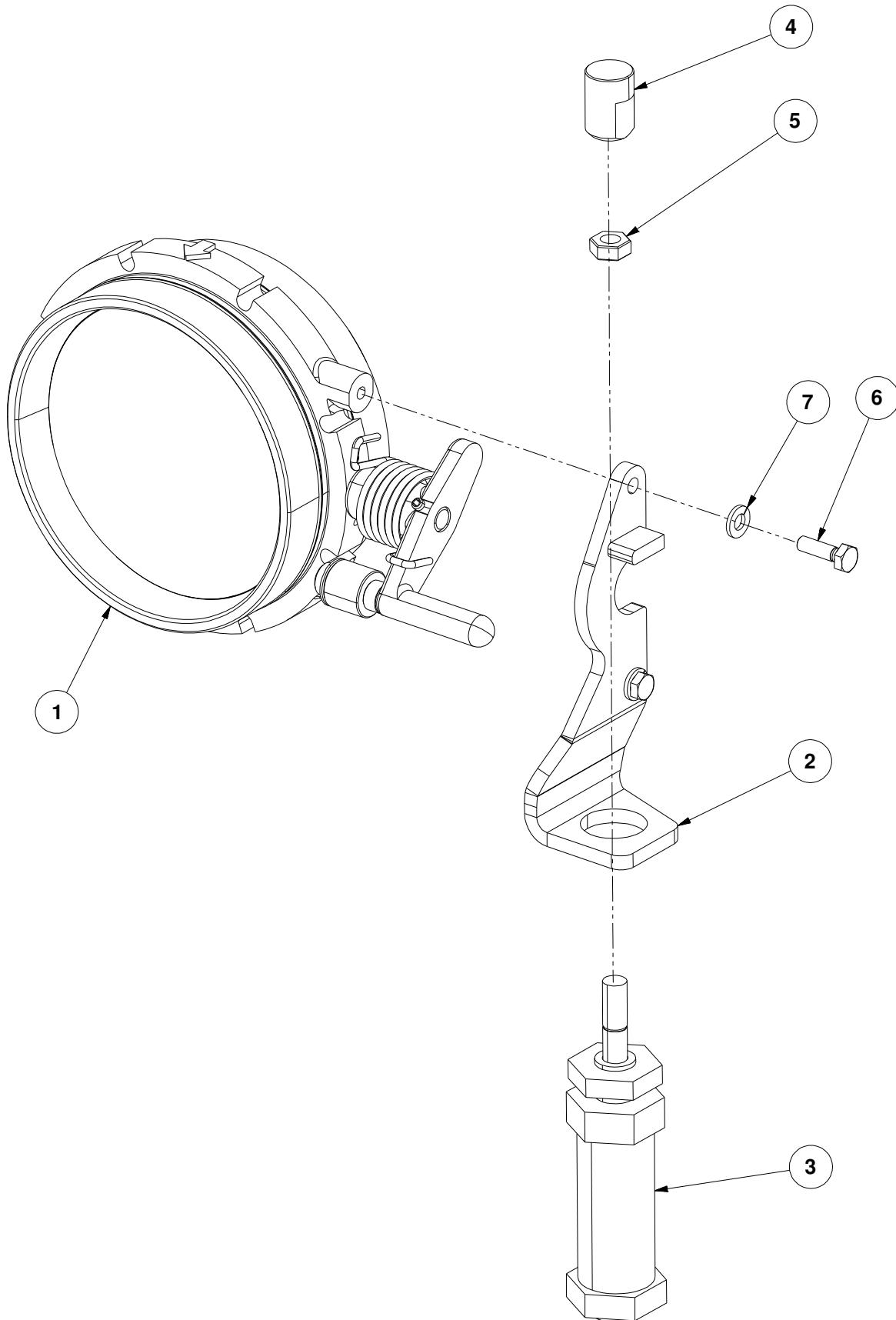
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-10-05**

Sandvik Underground Mining Flameproof Equipment

**A2U130-240084****FLAME TRAP ASSEMBLY****02-10-05****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-241041		1	A/C /Flametrap Modified
2	A2U220-241042		1	Inlet /Flametrap Cover
3	A2U220-244081		1	Hose, Silicon
4	A2U220-259009-1	02-10-10	1	Turbo Assembly Modified
5	A2U900-241033		1	Element, Flametrap
6	A2U900-243007		1	Gasket, Flametrap
7	C2A7C1152		1	Gasket, Aftercooler Flange
8	C2A9S4182		1	Plug 7/16" UNO
9	D59-02		1	Plug 1/8" BSPT
10	HAS040P		2	Hose Clamp 52/76 I.D.
11	445502799		6	Bolt Hex Head M10 x 20mm Long
12	450062508		6	Washer, Flat 10 mm
13	C2A6V5219		22	Bolt Hex Head M8 x 40mm Long
14	C2A9M1974		22	Washer, Flat M8

**A2U900-241058****SHUTDOWN VALVE****02-10-07-01****REV. 5**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

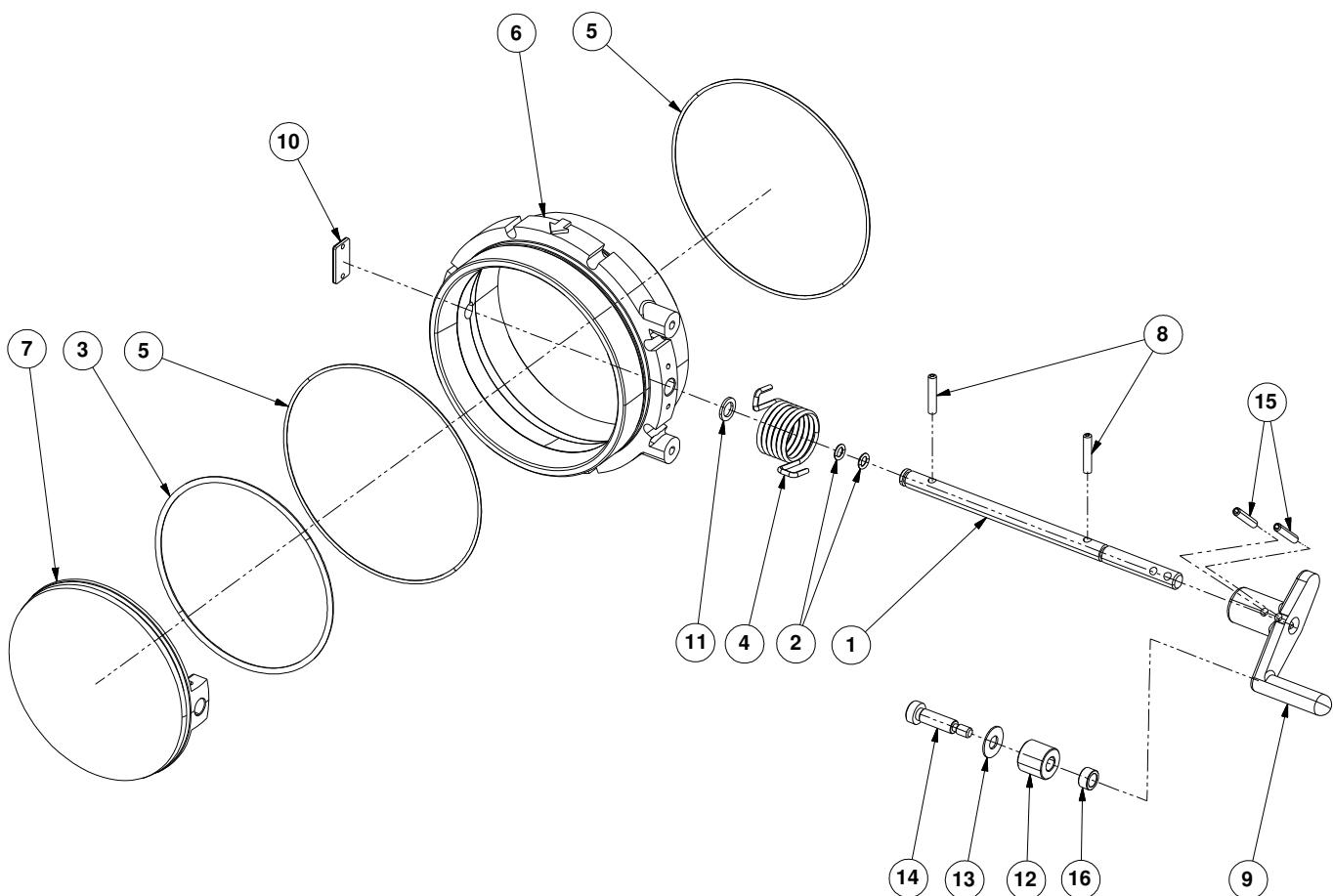
**SECTION    02-10-07-01**

Sandvik Underground Mining Flameproof Equipment

**A2U900-241058****SHUTDOWN VALVE****02-10-07-01****REV. 5**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-241053	02-10-07-01-01	1	Butterfly Valve
2	A2U900-241054		1	Butterfly Valve Bracket
3	A2U900-196202		1	Shut Down Valve Cylinder and Retaining Nut
4	A2U900-241068		1	Shut Down Valve Rod End
5	A2U900-196203		1	Shut Down Valve Rod End Lock Nut
6	445502660		2	Bolt Hex Head M6 x 20mm Long
7	450081116		2	Washer, Spring 6 mm

**A2U900-241053**  
**REV. 5**

**BUTTERFLY VALVE****02-10-07-01-01**

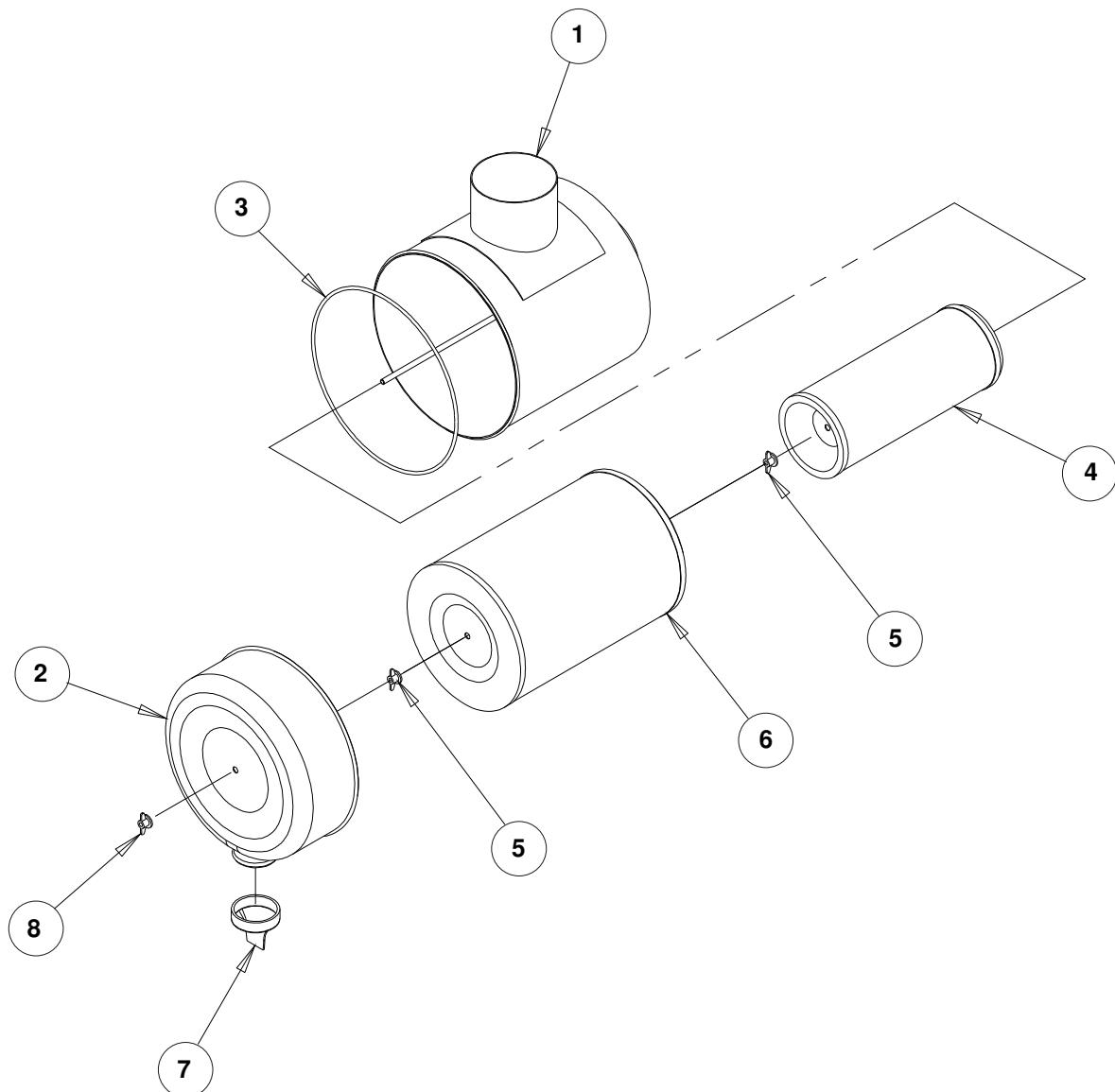
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    02-10-07-01-01**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U900-241053****BUTTERFLY VALVE****02-10-07-01-01****REV. 5**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-241063	1	1	Shut Down Valve Operating Shaft
2	A2U900-241064	2	1	Shut Down Valve Shaft O-Ring
3	A2U900-241065	1	1	Shut Down Valve Disc O-Ring
4	A2U900-241066	1	1	Shut Down Valve Return Spring
5	A2U900-241069	2	1	Shut Down Valve Body O-Ring
6	A2U900-241074	1	1	Shut Down Valve Body
7	A2U900-241075	1	1	Shut Down Valve Disc
8	A2U900-241076	2	1	Shut Down Valve Shaft Spring Pin
9	A2U900-241077	1	1	Shut Down Valve Operating Handle
10	A2U900-241081	1	1	Shut Down Valve Retaining Plate With Seal
11	A2U900-241082	1	1	Shut Down Valve Felt Seal
12	A2U900-241083	1	1	Shut Down Valve Roller
13	A2U900-241084	2	1	Shut Down Valve Roller Washer
14	A2U900-241085	1	1	Shut Down Valve Roller Retaining Bolt
15	A2U900-241086	2	1	Shut Down Valve Handle Spring Pin
16	A2U900-241091	1	1	Shut Down Valve Bush

**F3GAH19072****AIR CLEANER ASSEMBLY****02-10-08-01****REV. 0**

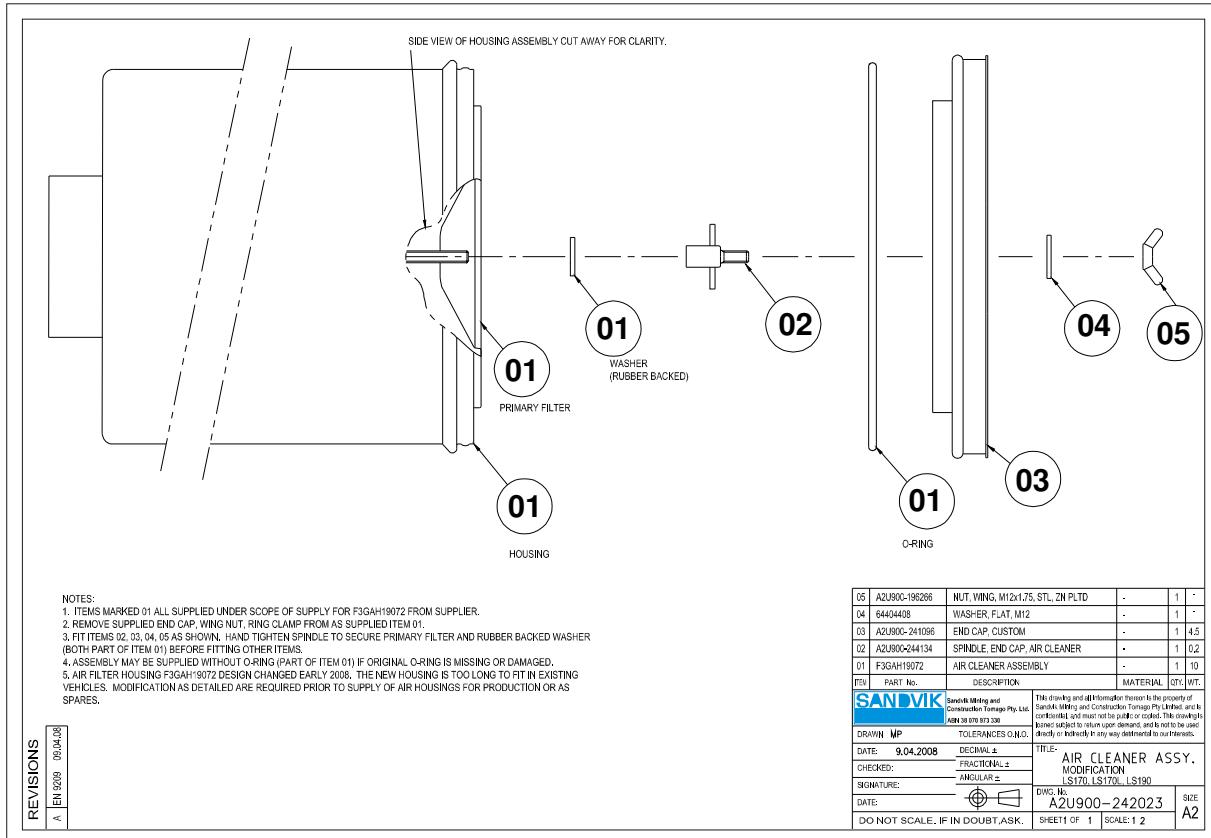
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    02-10-08-01**

Sandvik Underground Mining Flameproof Equipment

**F3GAH19072****AIR CLEANER ASSEMBLY****02-10-08-01****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-242023	02-10-08-01-01	1	Air Cleaner Modification
2	P3GQ32535		1	Cover Assembly
3	F3GQ04223		1	O_Ring
4	F3GAF820M		1	Element, Inner
5	F3GQ56268		2	Wing Nut
6	F3GAF424M		1	Element, Outer
7	F3GQ06316		1	Dust Ejector
8	F3GQ01453		1	Wing Nut

**A2U900-242023****AIR CLEANER MODIFICATION****02-10-08-01-01****REV. 0**

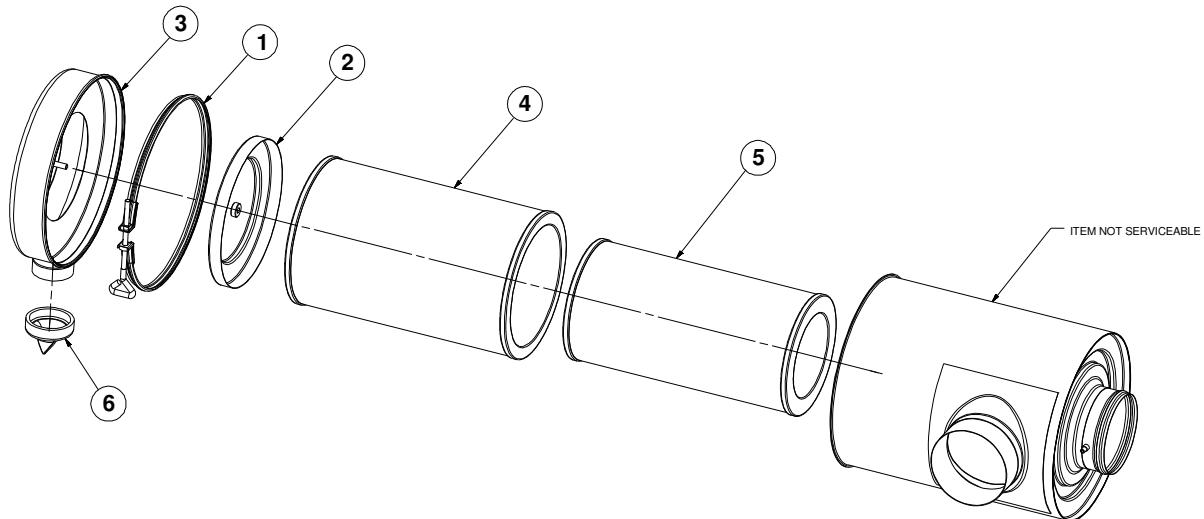
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-10-08-01-01**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U900-242023****AIR CLEANER MODIFICATION****02-10-08-01-01****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
01	F3GAH19072	1	1	Air Cleaner Assembly
02	A2U900-244134	1	1	Spindle End Cap
03	A2U900-241096	1	1	End Cap (Custom)
04	64404408	1	1	Washer Flat M12
05	F3GQ56268	1	1	Wing Nut M12 x 1.75

**A2U220-242017****AIR FILTER****02-10-09-01****REV. 3**

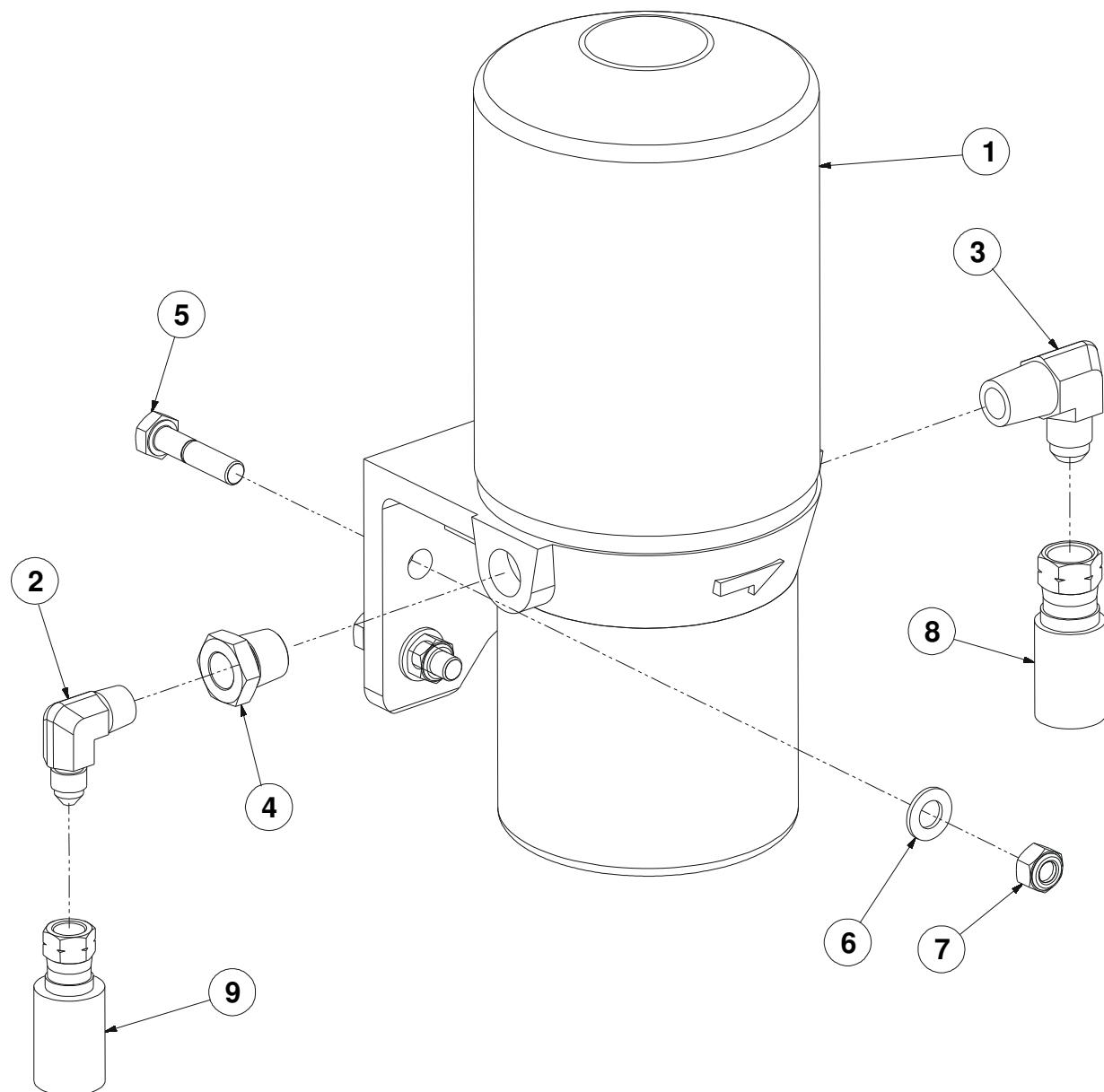
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    02-10-09-01**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U220-242017****AIR FILTER****02-10-09-01****REV. 3**

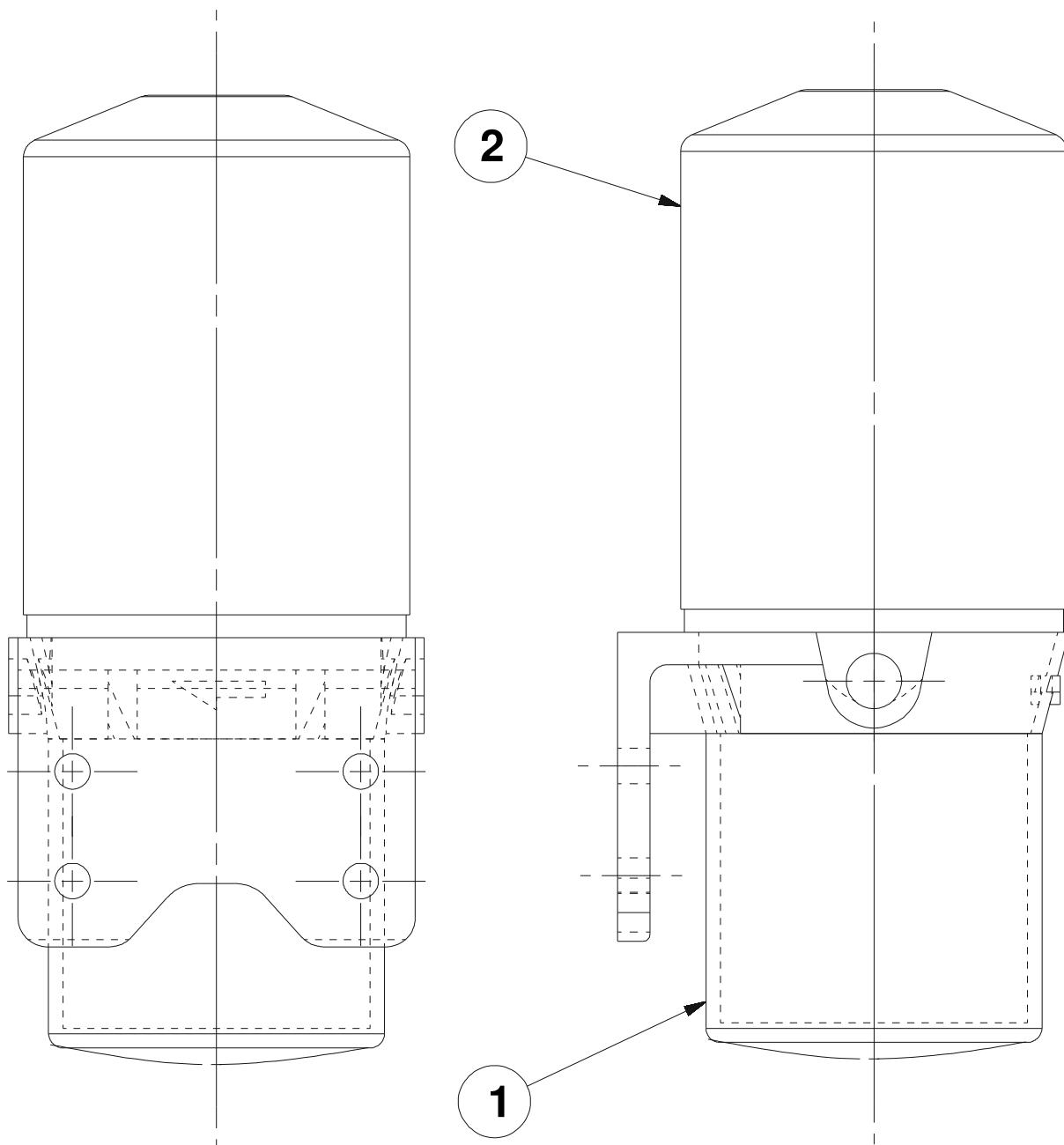
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	D2NP10-0866	1	1	Clamp Assembly
2	D2NP10-6771	1	1	Baffle
3	D2NP10-9297	1	1	Vacuator Cup Assembly
4	D2NP53-2503	1	1	Primary Filter Element
5	D2NP53-2504	1	1	Safety Filter Element
6	D2NP10-3198	1	1	Valve

**A2U220-290029****TURBO ACCUMULATOR GROUP****02-11****REV. 6**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-290029****TURBO ACCUMULATOR GROUP****02-11****REV. 6**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-293006	02-11-01	1	Turbo Accumulator Unit
2	D17-0407		1	Elbow 90, 1/4" Npt X 7/16" Jic M/M
3	D17-0609		1	Elbow 90, 3/8" Npt X 9/16" Jic M/M
4	D21-0604		1	Reducing Bush, 3/8" Npt X 1/4" Npt
5	445502764		4	Bolt Hex Head, M8 X 35Mm Long
6	450062506		4	Washer, Flat, 8 Mm
7	455669030		4	Hex Nyloc Nut, M8 X 1.25
8	D2900-06-150-09		1	Hose Assy, 9/16" Jic X 3/8" Hose
9	D2900-06-160-07		1	Hose Assy, 7/16" Jic X 3/8" Hose

**A2U220-293006****TURBO ACCUMULATOR****02-11-01****REV. 0**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-11-01**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

A2U220-293006

TURBO ACCUMULATOR

02-11-01

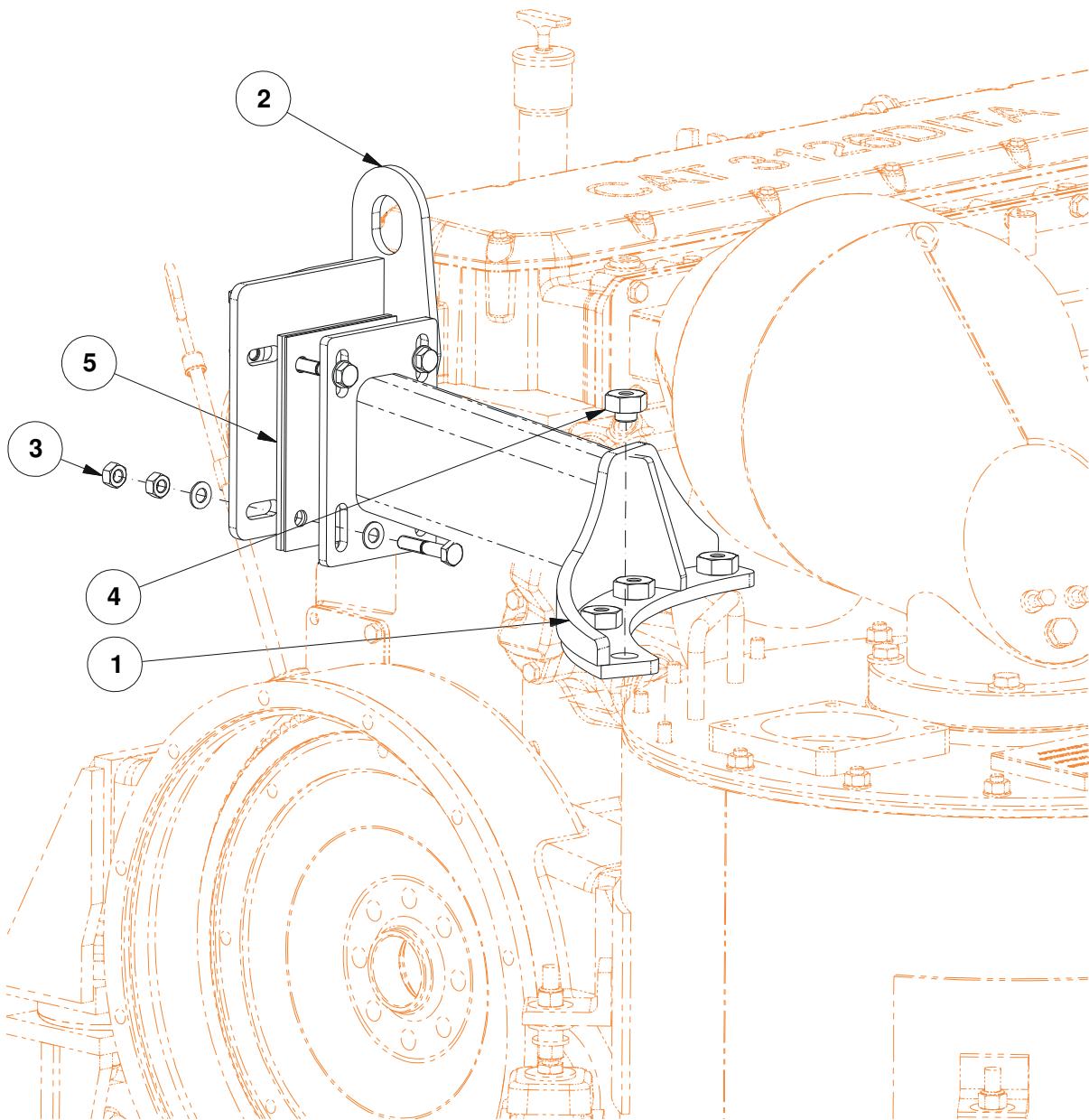
REV. 0

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	F3GLF3376		1	Oil Filter Element
2	A2U220-293004		1	Turbo Oil Accumulator

## EXHAUST SUPPORT BRACKET KIT

02-13

REV.



## NOTE:

1. EXHAUST CONDITIONER MUST BE ALIGNED CORRECTLY IN ORDER FOR THE BRACKET TO BE INSTALLED.
2. APPLY ANTI-SEIZE COMPOUND TO No.4 SHOCK ABSORBER NUT
3. ALL NUTS TO BE TIGHTENED TO 85 Nm TORQUE
4. TO ORDER THIS BRACKET AS A KIT, THE CUSTOMER ONLY NEEDS TO QUOTE BD00009809.
5. WHEN FITTING THE EXHAUST SUPPORT BRACKET KIT TO THE TS490 THE TURBO SAVIOUR WILL HAVE TO BE REPOSITIONED TO A DIFFERENT PART OF THE MACHINE. FOR TURBO SAVIOUR REPOSITIONING GUIDELINES ON THE TS 490 ASK YOUR SANDVIK REPRESENTATIVE FOR DRAWING NUMBER BD00013363.
6. THIS DRAWING RELATES TO TB1006.

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**EXHAUST SUPPORT BRACKET KIT****02-13****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BD00007134		1	BRACE - SHOCK ABSORBER WELDMENT
2	BD00014822		1	ENGINE LIFT. LUG WELDMENT
3	BD00009816		1	FASTENER KIT
4	A2U550-213071		4	SHOCK ABSORBER NUT
5	BD00014821		1	RUBBER PACKERS KIT

**BD00013762****TURBO ASSEMBLY KIT****02-17****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	C2A1S7057		1	GASKET-TURBO OIL PIPE
2	C2A7W2398		1	GASKET-TURBO OIL PIPE
3	A2U220-254091		1	GASKET-EXH. DOWNPipe TO SCRUBBER FLANGE
4	C2A4P7704		1	GASKET - EXHAUST MANIFOLD TO TURBO
5	A2U220-254092		1	GASKET - TURBO TO EXH. DOWNPipe
6	C2A8T7044		4	STUD M10
7	A2U900-243007		1	GASKET, FLAMETRAP
8	BD00011509	02-17-09	4	CONE LOCKNUT M10 **NOTE SAFETY BULLETIN

SB1005

**SAFETY BULLETIN SB1005**

02-17-09

REV. 0

**SAFETY BULLETIN**  
READ AND UNDERSTAND FIRST, THEN ACT1(3)  
SB1005  
Rev. AJune 9<sup>th</sup>, 2010

1. Topic:		TURBO LOCKING NUT ON CAT 3126 DITA DIESEL ENGINE SYSTEM
2. Exposed product(s) / Part(s) / Serial number(s):		ALL SANDVIK CAT 3126DITA EXPLOSION PROTECTED DIESEL ENGINE SYSTEMS
3. Possible occurrence of topic:	<input type="checkbox"/> Transport <input checked="" type="checkbox"/> Operation <input type="checkbox"/> Tramming	<input type="checkbox"/> Maintenance <input type="checkbox"/> Spare parts <input type="checkbox"/> Others:
4. Market area:	<input checked="" type="checkbox"/> EU, Others	<input checked="" type="checkbox"/> Canada, USA, Australia
5. Supplementary safety information including new hazard(s) identified how to avoid the hazard(s) and the potential consequences of not avoiding the hazard:	<p><b>DANGER</b></p>  <p>Incorrect installation of threaded turbo studs and/or turbo stud lock nuts may jeopardise the flameproof integrity of the exhaust system.</p> <p>Use of incorrect turbo studs and lock nuts may void the explosion protection properties of the Sandvik CAT 3126 DITA Diesel Engine System (SDDES).</p> <p>DO NOT operate any SDDES in hazardous areas requiring explosion protected Diesel Engine Systems without ensuring that approved turbo assemblies are fitted.</p>	

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P.O. Box 595

Raymond Terrace NSW 2324, Australia

[www.sandvik.com](http://www.sandvik.com)

This document shall be incorporated in the "information of use" documentation and kept there for the life of the product.  
Unless otherwise specified, Sandvik accepts no responsibility for changes, labor or replacements incurred from this bulletin.

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 02-17-09**

Sandvik Underground Mining Flameproof Equipment

**SB1005****SAFETY BULLETIN SB1005****02-17-09****REV. 0****SAFETY BULLETIN**  
READ AND UNDERSTAND FIRST, THEN ACT2(3)  
SB1005  
Rev. A**6. Actions to be taken immediately:**

At the first available opportunity, the vehicle should be moved into a workshop environment to remove the turbo assembly and follow the reinstallation process described in the attached assembly instruction. This instruction specifies the new nuts to be used and also includes instructions for the proper installation of Sandvik CAT 3126A Turbo Assemblies. This procedure requires new turbo studs, nuts and exhaust path gaskets.

Until such time as the reinstallation of the turbo can be undertaken and nuts changed, Sandvik recommend that the four nuts and studs connecting the turbo onto the exhaust manifold are visually inspected (see Fig 1) on a weekly basis by mine maintenance personnel. In the event that a turbo stud locking nut appears to be loose or missing, the DES **MUST** not be operated in hazardous areas. Loose turbo fasteners may result in a failure of the flameproof properties of the exhaust system.

Figure 1. Photo of Turbo Locking Nuts

The Owner of machinery has a liability to inform and when necessary to train according to the content of this Bulletin all the personnel (like operators, maintenance personnel) whom this Bulletin concerns.

**7. List of Attachment(s):**

Assembly instructions for turbo assembly A2U220-259009 onto CAT 3126A engine. It is recommended that this attachment be placed within the vehicle service manual, and service personnel made aware of the procedure.

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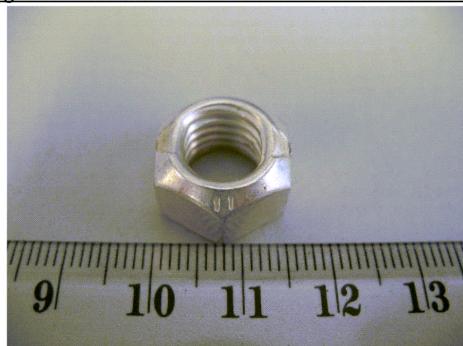
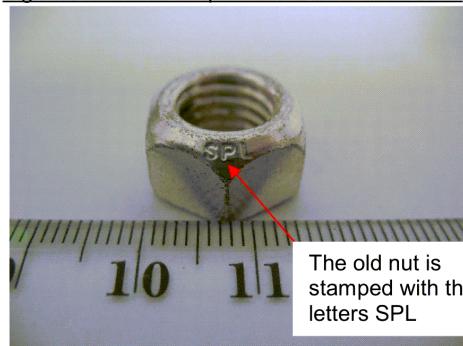
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**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION 02-17-09**

Sandvik Underground Mining Flameproof Equipment

**SB1005****SAFETY BULLETIN SB1005****02-17-09****REV. 0****SAFETY BULLETIN**  
READ AND UNDERSTAND FIRST, THEN ACT3(3)  
SB1005  
Rev. A**8. Further details to Customers:****New Locking Nut BD00011509**

Sandvik has been made aware of locking nuts coming loose or missing from the turbo stud p/n C2A8T7044 and as a result of this Sandvik has superseded the old locking nut p/n C2A3E8017 and replaced it with new locking nut p/n BD00011509, see Fig. 2. The old locking nut p/n C2A3E8017 is stamped with the letters SPL, see Fig 3. Customers can return C2A3E8017 to Sandvik for credit.

Figure 2. Photo of new cone lock nut BD00011509Figure 3. Photo of superseded nut C2A3E8017

The old nut is stamped with the letters SPL

These engine systems are fitted to the following Sandvik machines, but may also be fitted to other plant within your coal mine:

- LS160 (former name ED6) Loaders
- LS170 (former name ED7) Loaders
- LS170R Loaders
- LS170L (former name ED7LP) Loaders
- LS190 (former name ED10) Loaders
- TS 350 (former name ED25) Shield Haulers
- TS 390 (former name ED30) Shield Haulers
- TS 490 (former name ED40) Shield Haulers

In addition to the locking nut replacement noted above, Sandvik are aware of improper turbo installations which may be contributing to premature turbo failures. The assembly procedure attached to this safety bulletin provides instructions for the proper installation of the turbo assembly in order to maximise reliability. It is recommended that this procedure be followed whenever reinstalling the Sandvik turbo assembly A2U220-259009 onto the Sandvik CAT 3126A DITA Diesel Engine System.

**Author:** Myles Wylie, Sandvik Hexham

**Approved by Product Line Manager:** Richard Osborn |

Please contact your local Sandvik office for any further information you may require

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**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 02-17-09**

**Sandvik Underground Mining Flameproof Equipment**



## PARTS MANUAL

**SB1005**

### **SAFETY BULLETIN SB1005**

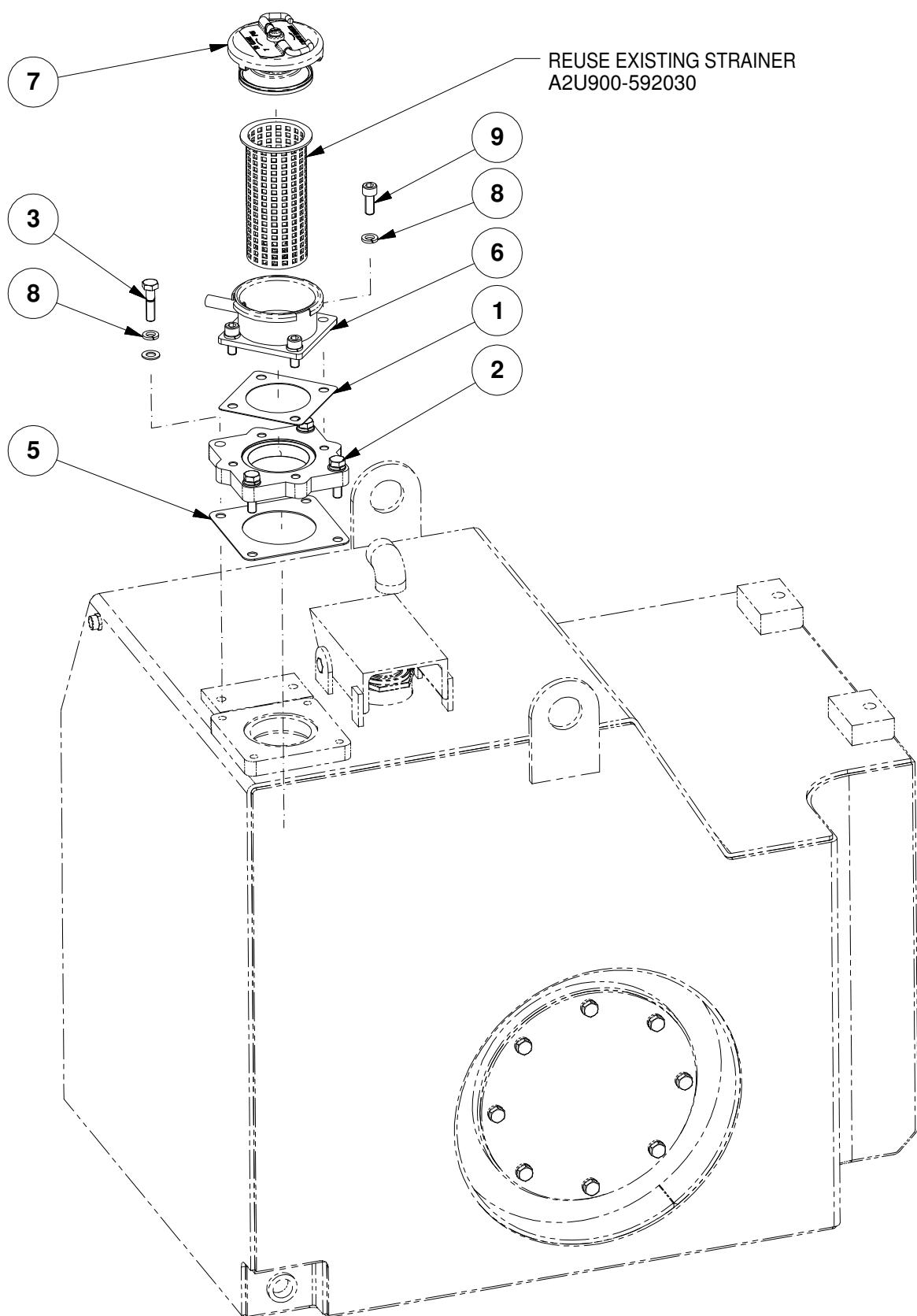
**02-17-09**

**REV. 0**

**ITEM PART NO PAGE QTY**

**DESCRIPTION**

**\*\*PLEASE READ THIS SAFETY BULLETIN BEFORE CARRYING  
OUT ANY WORK ON TURBO\*\***

**BD00015384****FILLER CAP - NECK ASSY.  
REPLACEMENT KIT (M.U. TANK)****02-18****REV. 1**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**FILLER CAP - NECK ASSY.  
REPLACEMENT KIT (M.U. TANK)**

02-18

**BD00015384****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	SGA25C	1	1	GASKET, FILLER NECK 400 SERIES
2	BD00015213	1	1	ADAPTER FLANGE
3	A2U900-392122	4	1	Bolt Hex Head, M10 x 40mm Long
4	A2U900-392104	4	1	Washer, Flat, 10 mm
5	A2U900-254054	1	1	GASKET
6	64804354	1	1	FILLER NECK 400 SERIES
7	64804353	1	1	FILLER CAP, 7 PSI, 400 SERIES
8	450081022	8	1	Washer, Spring, 10 mm
9	445208801	4	1	SHCS M10 X 25

**Filter\_Kit\_ED10****ED10 MAINTENANCE FILTER KITS****02-40****REV.**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	A2U220-292032	02-40-04		250 HOUR FILTER KIT EATON
2	A2U220-292033	02-40-05		500 HOUR FILTER KIT EATON
3	A2U220-292034	02-40-06		1000 HOUR FILTER KIT EATON ***
4	A2U900-292038	02-40-07		250 HOUR FILTER KIT PARKER
5	A2U900-292039	02-40-08		500 HOUR FILTER KIT PARKER
6	A2U900-292040	02-40-09		1000 HOUR FILTER KIT PARKER ***
7	A2U900-292045	02-40-10		250 HOUR FILTER KIT FIXED DISPLACEMENT
8	A2U900-292046	02-40-11		500 HOUR FILTER KIT FIXED DISPLACEMENT
9	A2U900-292047	02-40-12		1000 HOUR FILTER KIT FIXED DISPLACEMENT ***
10	A2U900-292048	02-40-13		250 HOUR FILTER KIT COMPACT FILTER
11	A2U900-292049	02-40-14		500 HOUR FILTER KIT COMPACT FILTER
12	A2U900-292050	02-40-15		1000 HOUR FILTER KIT COMPACT FILTER ***

**PARTS MANUAL****A2U220-292032****ED10 EATON 250 HOUR FILTER KIT****02-40-04****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2		Gasket Exhaust Conditioner
2	A2U900-267100	1		Vee Belt Fras A32
3	A2U900-243007	1		Gasket-Flametrap Housing
4	CL230962	1		Element
5	C2A1R0716	1		Filter As Engine Oil
6	C2A1R0751	1		Filter Engine Fuel Cat 3126Ta
7	F3GAF424M	1		Element Primary
8	F3GAF820M	1		Element Safety
9	F3GFS1221	1		Filter Fuel
10	F3GLF3376	1		Filter Element Turbo Accumulator
11	SCRUBBER	1		5 Litre Container

**PARTS MANUAL****ED10 EATON 500 HOUR SERVICE  
KIT**

02-40-05

**A2U220-292033****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U220-592052			
4	A2U900-243007	1	1	Gasket-Flametrap Housing
5	CL230962	1	1	Element
6	C2A1R0716	1	1	Filter As Engine Oil
7	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
8	F3GAF424M	1	1	Element Primary
9	F3GAF820M	1	1	Element Safety
10	F3GFS1221	1	1	Filter Fuel
11	F3GLF3376	1	1	Filter Element Turbo Accumulator
12	SCRUBBER	1	1	5 Litre Container
13	64117540	1	1	Filter

**PARTS MANUAL****ED10 EATON 1000 HOUR SERVICE  
KIT**

02-40-06

**A2U220-292034****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U220-592052	1	1	Filter Element 6 Micron
4	A2U900-243007	1	1	Gasket-Flametrap Housing
5	A2U900-694090	2	1	Valve Temperature Shut Down 103 deg.
6	CL230962	1	1	Element
7	C2A1R0716	1	1	Filter As Engine Oil
8	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
9	C2A7C1160	1	1	Gasket-Oil Cooler
10	C2A8M4445	2	1	O-Ring - Oil Cooler
11	F3GAF424M	1	1	Element Primary
12	F3GAF820M	1	1	Element Safety
13	F3GFS1221	1	1	Filter Fuel
14	F3GLF3376	1	1	Filter Element Turbo Accumulator
15	SCRUBBER	1	1	5 Litre Container
16	64117540	1	1	Filter

**A2U900-292038 ED10 PARKER 250 HOUR FILTER KIT 02-40-07****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2		Gasket Exhaust Conditioner
2	A2U900-267100	1		Vee Belt Fras A32
3	A2U900-243007	1		Gasket-Flametrap Housing
4	A2U900-592079	1		Element Filter Fan Offline Return
5	A2U900-592082	1		Filter Element Fan pressure Filter
6	CL230962	1		Element
7	C2A1R0716	1		Filter As Engine Oil
8	C2A1R0751	1		Filter Engine Fuel Cat 3126Ta
9	F3GFS1221	1		Filter Fuel
10	F3GLF3376	1		Filter Element Turbo Accumulator
11	SCRUBBER	1		5 Litre Container

**PARTS MANUAL****ED10 PARKER 500 HOUR SERVICE  
KIT**

02-40-08

**A2U900-292039****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U900-243007	1	1	Gasket-Flametrap Housing
4	A2U900-592079	1	1	Element Filter Fan Offline Return
5	A2U900-592082	1	1	Filter Element Fan pressure Filter
6	CL230962	1	1	Element
7	C2A1R0716	1	1	Filter As Engine Oil
8	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
9	F3GFS1221	1	1	Filter Fuel
10	F3GLF3376	1	1	Filter Element Turbo Accumulator
11	SCRUBBER	1	1	5 Litre Container
12	64117540	1	1	**Hydraulic Return Filter (Mandalong Only)

\*\*Denotes a special for the Customer

**PARTS MANUAL****ED10 PARKER 1000 HOUR SERVICE  
KIT**

02-40-09

**A2U900-292040****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U900-243007	1	1	Gasket-Flametrap Housing
4	A2U900-592079	1	1	Element Filter Fan Offline Return
5	A2U900-592082	1	1	Filter Element Fan pressure Filter
6	A2U900-694090	2	1	**Valve Temperature Shut Down 103 deg. (Not for Mandalong)
7	CL230962	1	1	Element
8	C2A1R0716	1	1	Filter As Engine Oil
9	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
10	C2A7C1160	1	1	Gasket-Oil Cooler
11	C2A8M4445	2	1	O-Ring - Oil Cooler
12	F3GFS1221	1	1	Filter Fuel
13	F3GLF3376	1	1	Filter Element Turbo Accumulator
14	SCRUBBER	1	1	5 Litre Container

\*\*Denotes a special for the Customer

**PARTS MANUAL****ED10 FIXED DISPLACEMENT 250  
HOUR FILTER KIT**

02-40-10

**A2U900-292045****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U900-243007	1	1	Gasket-Flametrap Housing
4	CL230962	1	1	Element
5	C2A1R0716	1	1	Filter As Engine Oil
6	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
7	F3GAF424M	1	1	Element Primary
8	F3GAF820M	1	1	Element Safety
9	F3GFS1221	1	1	Filter Fuel
10	F3GLF3376	1	1	Filter Element Turbo Accumulator
11	SCRUBBER	1	1	5 Litre Container

**PARTS MANUAL****ED10 FIXED DISPLACEMENT 500  
HOUR SERVICE KIT**

02-40-11

**A2U900-292046****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U900-243007	1	1	Gasket-Flametrap Housing
4	CL230962	1	1	Element
5	C2A1R0716	1	1	Filter As Engine Oil
6	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
7	F3GAF424M	1	1	Element Primary
8	F3GAF820M	1	1	Element Safety
9	F3GFS1221	1	1	Filter Fuel
10	F3GLF3376	1	1	Filter Element Turbo Accumulator
11	SCRUBBER	1	1	5 Litre Container
12	VFA217	1	1	Element
13	64117540	1	1	Filter

**PARTS MANUAL****ED10 FIXED DISPLACEMENT 1000  
HOUR SERVICE KIT**

02-40-12

**A2U900-292047****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U900-243007	1	1	Gasket-Flametrap Housing
4	A2U900-694090	2	1	Valve Temperature Shut Down 103 deg.</>
5	CL230962	1	1	Element
6	C2A1R0716	1	1	Filter As Engine Oil
7	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
8	C2A7C1160	1	1	Gasket-Oil Cooler
9	C2A8M4445	2	1	O-Ring - Oil Cooler
10	F3GAF424M	1	1	Element Primary
11	F3GAF820M	1	1	Element Safety
12	F3GFS1221	1	1	Filter Fuel
13	F3GLF3376	1	1	Filter Element Turbo Accumulator
14	SCRUBBER	1	1	5 Litre Container
15	VFA217	1	1	Element
16	64117540	1	1	Filter

**PARTS MANUAL****ED10 COMPACT FILTER 250 HOUR  
FILTER KIT**

02-40-13

**A2U900-292048****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U900-243007	1	1	Gasket-Flametrap Housing
4	A2U900-592079	1	1	Element Filter Fan Offline Return
5	A2U900-592082	1	1	Filter Element Fan Pressure Filter
6	CL230962	1	1	Element
7	C2A1R0716	1	1	Filter As Engine Oil
8	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
9	F3GAF424M	1	1	Element Primary
10	F3GAF820M	1	1	Element Safety
11	F3GFS1221	1	1	Filter Fuel
12	F3GLF3376	1	1	Filter Element Turbo Accumulator
13	SCRUBBER	1	1	5 Litre Container

**PARTS MANUAL****ED10 COMPACT FILTER 500 HOUR  
SERVICE KIT**

02-40-14

**A2U900-292049****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2	1	Gasket Exhaust Conditioner
2	A2U900-267100	1	1	Vee Belt Fras A32
3	A2U900-243007	1	1	Gasket-Flametrap Housing
4	A2U900-592079	1	1	Element Filter Fan Offline Return
5	A2U900-592082	1	1	Filter Element Fan Pressure Filter
6	CL230962	1	1	Element
7	C2A1R0716	1	1	Filter As Engine Oil
8	C2A1R0751	1	1	Filter Engine Fuel Cat 3126Ta
9	F3GAF424M	1	1	Element Primary
10	F3GAF820M	1	1	Element Safety
11	F3GFS1221	1	1	Filter Fuel
12	F3GLF3376	1	1	Filter Element Turbo Accumulator
13	SCRUBBER	1	1	5 Litre Container

**PARTS MANUAL****ED10 COMPACT FILTER 1000 HOUR  
FILTER KIT**

02-40-15

**A2U900-292050****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-254090	2		Gasket Exhaust Conditioner
2	A2U900-267100	1		Vee Belt Fras A32
3	A2U900-243007	1		Gasket-Flametrap Housing
4	A2U900-592079	1		Element Filter Fan Offline Return
5	A2U900-592082	1		Filter Element Fan Pressure Filter
6	A2U900-694090	2		Valve Temperature Shut Down 103 deg.
7	CL230962	1		Element
8	C2A1R0716	1		Filter As Engine Oil
9	C2A1R0751	1		Filter Engine Fuel Cat 3126Ta
10	C2A7C1160	1		Gasket-Oil Cooler
11	C2A8M4445	2		O-Ring - Oil Cooler
12	F3GAF424M	1		Element Primary
13	F3GAF820M	1		Element Safety
14	F3GFS1221	1		Filter Fuel
15	F3GLF3376	1		Filter Element Turbo Accumulator
16	SCRUBBER	1		5 Litre Container

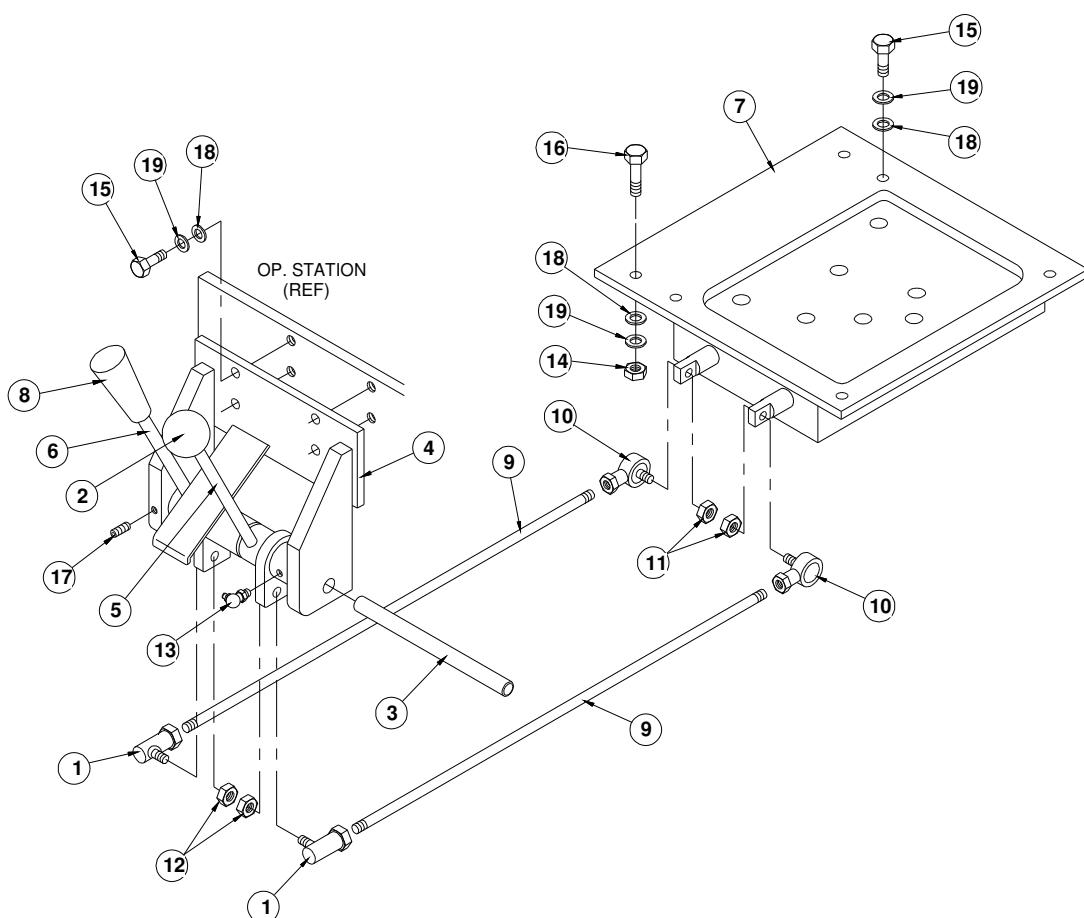
**DRIVETRAIN****03-00****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	A2U220-440015	03-01		TRANSMISSION CONTROL VALVE GROUP
	A2U220-330041	03-02		TRANSMISSION AND MOUNTING GROUP LS170/190
	A2U220-310027	03-04		TORQUE CONVERTER GROUP
	A2U220-320029	03-05		DRIVELINE GROUP, FRONT LS190/ LS191
	A2U220-320030	03-07		DRIVELINE GROUP, REAR
	A2U220-340060	03-08		AXLE GROUP, FRONT
	A2U220-340059	03-09		AXLE GROUP, REAR
	BU00001435	03-10		WHEEL AND TYRE GROUP LS190/ 191 BIS

**A2U220-440015**  
**REV. 4**

**TRANSMISSION CONTROL VALVE  
GROUP**

**03-01**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 03-01**

**Sandvik Underground Mining Flameproof Equipment**

**TRANSMISSION CONTROL VALVE  
GROUP**

03-01

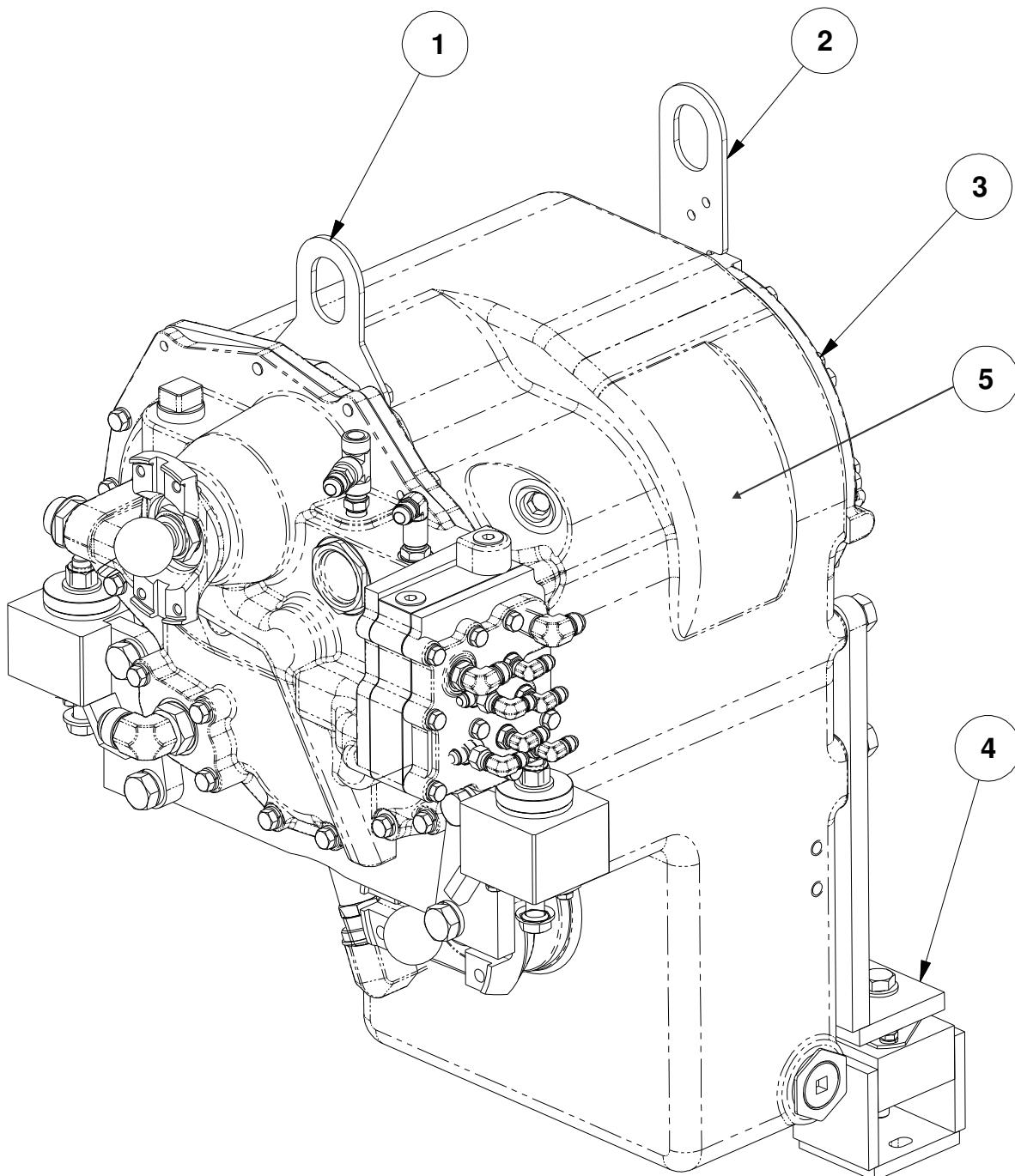
**A2U220-440015****REV. 4**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	64100485	2	1	KNUCKLE JOINT
2	64107263	1	1	KNOB
3	A2U130-391156	1	1	SHAFT
4	A2U130-391171	1	1	MOUNT BRACKET
5	A2U130-391154	1	1	GEAR SELECT LEVER
6	A2U220-391162	1	1	DIRECTION CONTROL LEVER
7	228655	1	1	VALVE MOUNT PLATE
8	A2U900-492023	1	1	KNOB, TAPERED
9	254058	2	1	ROD
10	6440066	2	1	BALL JOINT
11	L255	2	1	CONELOCK UNF 5/6"
12	L256	2	1	LOCKNUT UNF 3/8"
13	P1FG	2	1	GREASE NIPPLE, 90 DEG
14	455309034	2	1	NUT M10
15		4	1	BUTTON HEAD M10 x 35 LG
16	445502807	2	1	BOLT, HEX HD M10 x 45 LG
17	445250791	2	1	GRUB SCREW M10 x 12 LG
18	A2U900-392104	6	1	WASHER, FLAT, S.S. M10
19	A2U900-392100	6	1	WASHER, SPRING M10
20	T6H20	4	1	BOLT, HEX HD UNC 3/8" x 1" 1/4
21	WG6F	4	1	WASHER, SPRING 3/8"
22	W6GA	4	1	WASHER, FLAT 3/8"

**A2U220-330041**  
**REV. 5**

**TRANSMISSION AND MOUNTING  
GROUP**

**03-02**



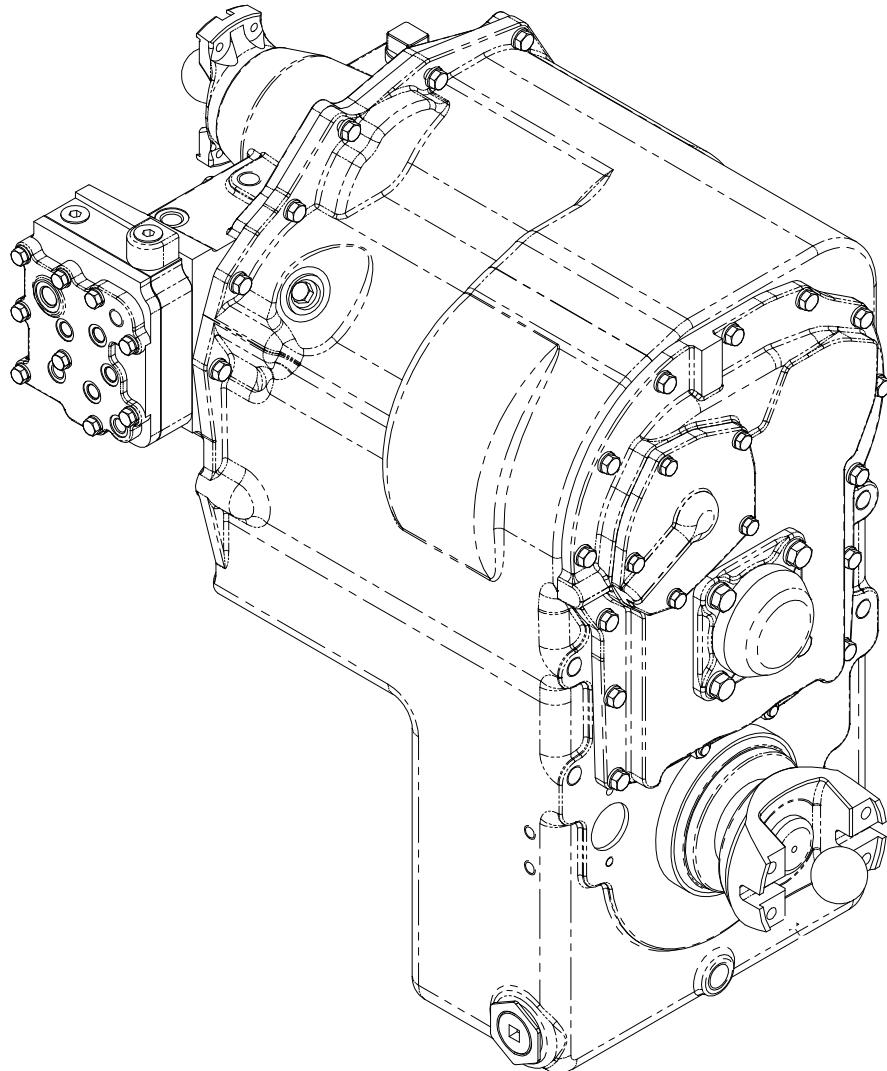
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 03-02**

**Sandvik Underground Mining Flameproof Equipment**

**TRANSMISSION AND MOUNTING  
GROUP****03-02****A2U220-330041****REV. 5**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U913-391144		1	LIFTING BRACKET
2	A2U913-391143		1	LIFTING BRACKET
3	A2U900-331059-1	03-02-04	1	TRANSMISSION
4	A2U130-330045-1	03-02-02	1	TRANSMISSION MOUNTS ASSY.
5	A2U130-197201		1	SOUND INSULATION, TRANSMISSION

**A2U900-331059****TRANSMISSION GROUP****03-02-01****REV. 1****GEAR RATIOS:**

- 1ST - 4.64
- 2ND - 2.23
- 3RD - 1.29
- 4TH - 0.75

**MODULATION: YES - 6 PLATE****INPUT YOKE TO TRANSMISSION: 6C****PUMP DRIVE: NIL - R MODEL****CONTROL VALVE: REMOTE MOUNTED****CONTROL VALVE: FACE ENTRY REMOTE ADAPTER PLATE  
AT TRANSMISSION****OUTPUT FLANGE: FRONT - 8.5C HA  
REAR - 8.5C HA****REMOTE FILTER: YES - INCLUDE AS PART OF THE  
CONVERTOR ASSEMBLY****ESPD: NO****PTO: NO****PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**A2U900-331059****TRANSMISSION GROUP****03-02-01****REV. 1**

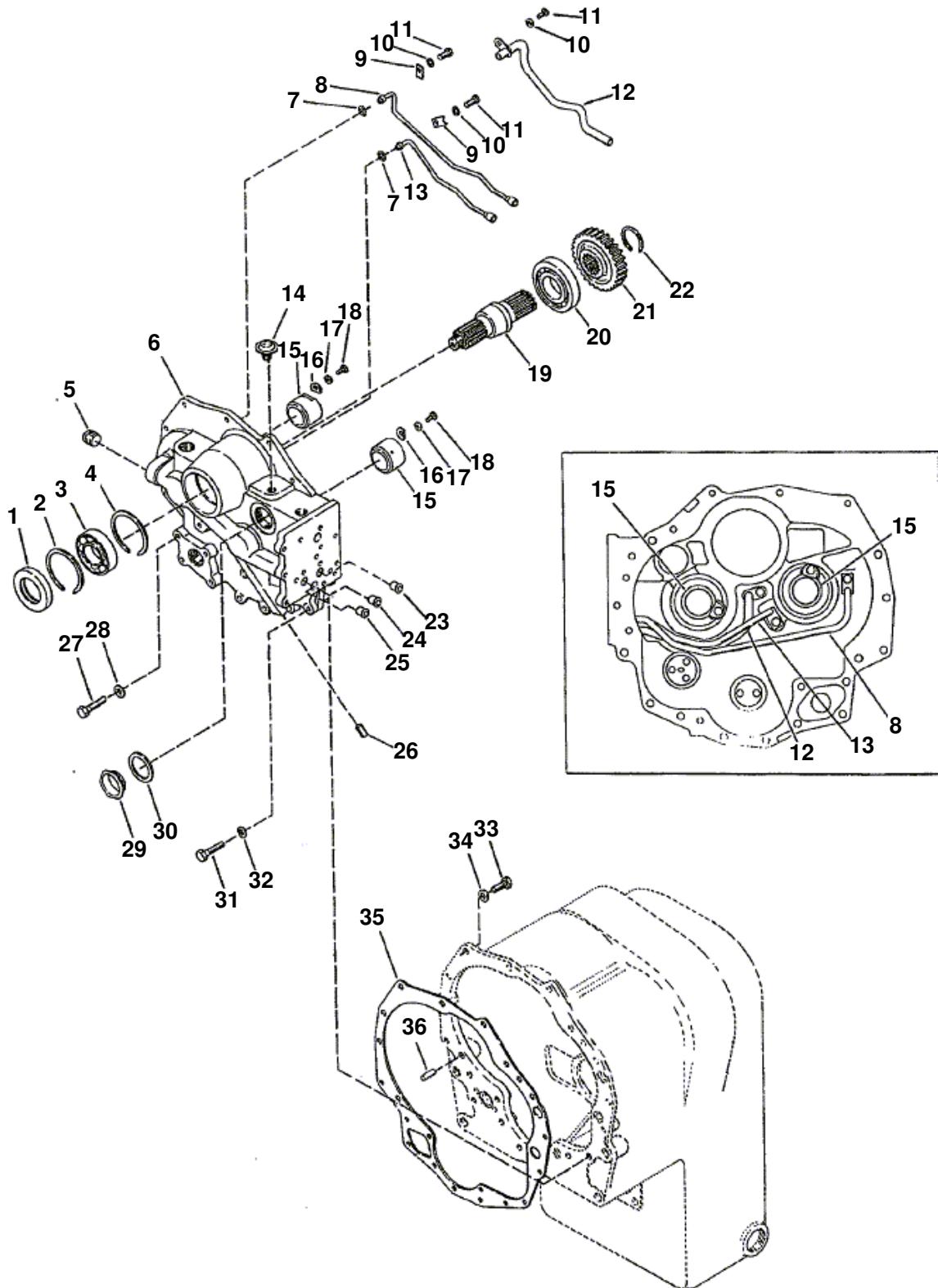
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1		03-02-01-01	1	INPUT SHAFT & FRONT COVER GROUP
2		03-02-01-02	1	TRANSMISSION CASE & REAR COVER GROUP
3		03-02-01-03	1	TRANSMISSION CASE & REAR COVER
4		03-02-01-04	1	REVERSE & HIGH SHAFT GROUP
5		03-02-01-05	1	FORWARD & 2ND SHAFT GROUP
6		03-02-01-06	1	SHAFT GROUP
7		03-02-01-07	1	IDLER SHAFT & 4TH SPEED
8		03-02-01-08	1	OUTPUT SHAFT GROUP
9		03-02-01-09	1	CONTROL VALVE ASSEMBLY
10		03-02-01-16	1	ADAPTER PLATE GROUP WITH MODULATION
11		03-02-20-11	1	MODULATED VALVE ASSEMBLY
12		03-02-01-12	1	FILTER ASSEMBLY

**TRAN-1**  
**REV.**

**INPUT SHAFT & FRONT COVER  
GROUP**

**03-02-01-01**

**INTERNAL MODULATOR BY-PASS**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    03-02-01-01**

Sandvik Underground Mining Flameproof Equipment

**INPUT SHAFT & FRONT COVER  
GROUP**

03-02-01-01

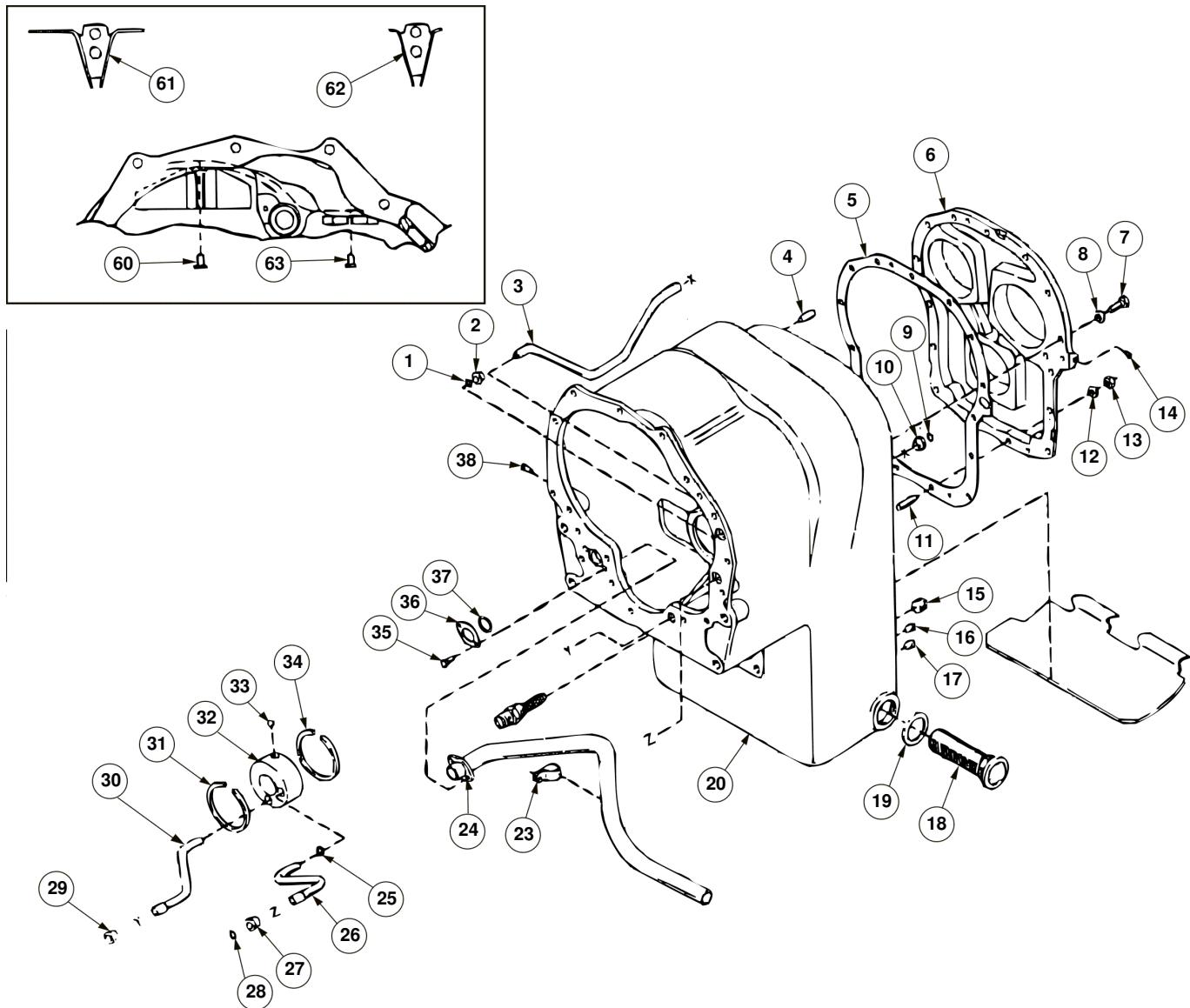
**TRAN-1****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04693883		1	INPUT FLANGE OIL SEAL
2	04700664		1	INPUT SHAFT FRONT BEARING RETAINING RING
3	04700718		1	INPUT SHAFT FRONT BEARING
4	04700664		1	INPUT SHAFT FRONT BEARING RETAINING RING
5	04700830		1	PIPE PLUG
6	04698871		1	FRONT COVER & TUBE ASSEMBLY - INCLUDES ITEMS 7 THRU 13, 15 THRU 18, 23, 24, 25
7	04698872		2	O_RING
8	04699399		1	3RD SPEED TUBE ASSEMBLY
9	04699173		2	TUBE CLIP
10	04694301		3	TUBE CLIP SCREW LOCKWASHER
11	04699175		3	TUBE CLIP SCREW
12	04698873		1	MODULATOR BY-PASS TUBE ASSEMBLY
13	04699398		1	REVERSE TUBE ASSEMBLY
14	04699556		1	BREATHER
15	04693879		2	FRONT COVER SLEEVE
16	04699051		2	FRONT COVER SLEEVE LOCK
17	04694301		2	SLEEVE LOCKSCREW LOCKWASHER
18	04699175		2	SLEEVE LOCKSCREW
19	04700715		1	INPUT SHAFT
20	04699954		1	INPUT SHAFT REAR BEARING
21	04699955		1	INPUT SHAFT GEAR 30T
22	04700860		1	INPUT SHAFT GEAR RETAINING RING
23	04700532		1	TUBE SLEEVE
24	04700532		1	TUBE SLEEVE
25	04700532		1	TUBE SLEEVE
26	04699452		1	PIPE PLUG
27	04699178		4	COVER TO CASE SCREW
28	04694262		4	COVER TO CASE SCREW LOCKWASHER
29	04699046		1	FRONT COVER PLUG
30	56039212		1	FRONT COVER PLUG GASKET
31	04699179		4	COVER TO CASE SCREW
32	04694262		4	COVER TO CASE SCREW LOCKWASHER
33	04699181		10	COVER TO CASE SCREW
34	04694262		10	COVER TO CASE SCREW LOCKWASHER
35	04700677		1	FRONT COVER GASKET
36	04700596		2	FRONT COVER DOWEL PIN

**TRAN-2**  
**REV.**

**TRANSMISSION CASE & REAR  
COVER GROUP**

**03-02-01-02**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    03-02-01-02**

Sandvik Underground Mining Flameproof Equipment

**TRAN-2**
**TRANSMISSION CASE & REAR  
COVER GROUP**
**03-02-01-02**
**REV.**

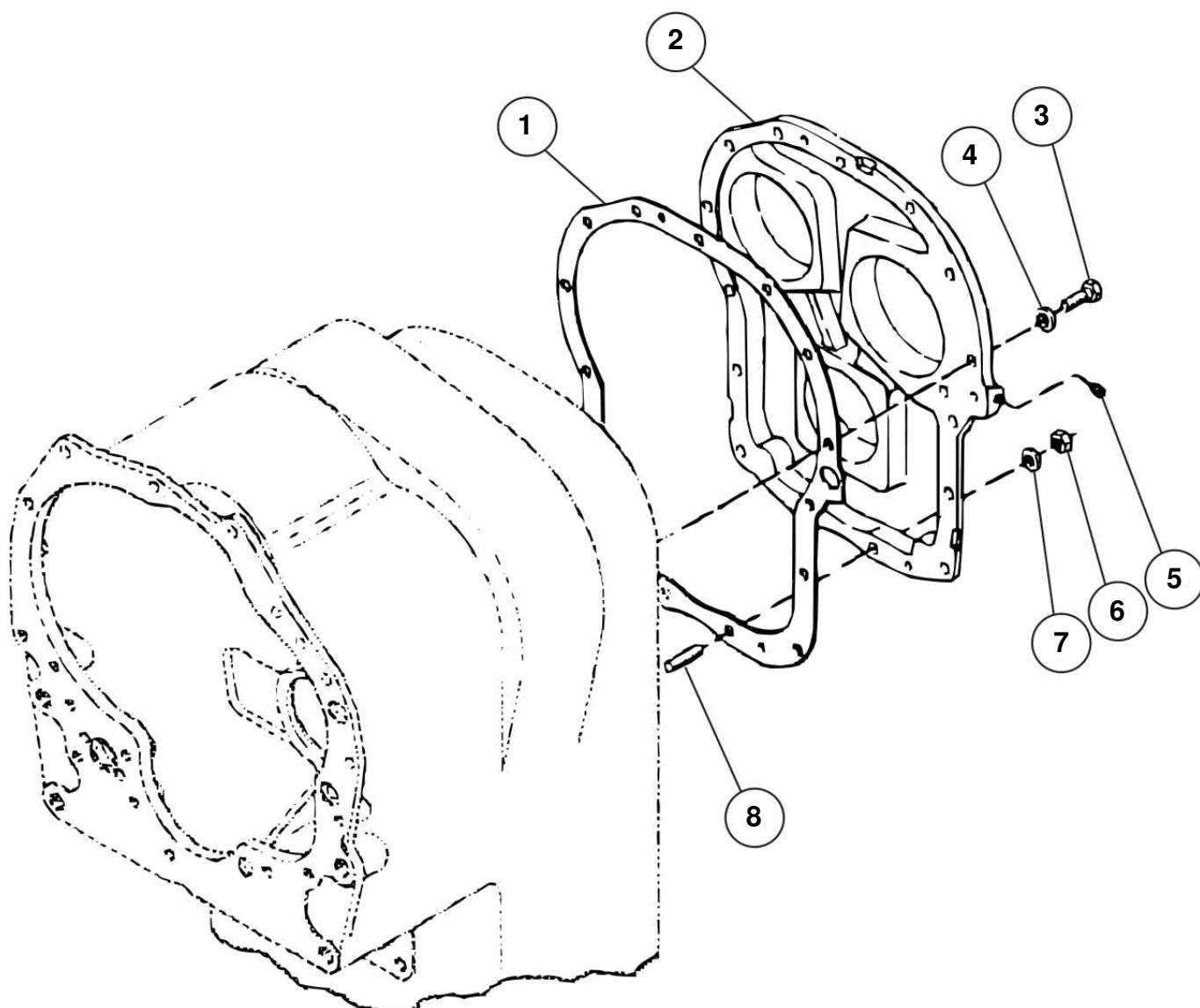
<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	04697276		1	Clutch Pressure Tube "O"Ring
2	04700532		1	Tube Sleeve
3	04699052		1	Low Speed Clutch Pressure Tube
4	04699180		2	Rear Cover Dowel Pin
5	04700674	03-02-01-03	1	Rear Cover To Transmission Case Gasket
6	56011446	03-02-01-03	1	Rear Cover
7	04699181	03-02-01-03	21	Rear Cover To Transmission Case Screw
8	04694262	03-02-01-03	21	Rear Cover To Transmission Case Screw Lockwasher
9	04697276		1	Clutch Pressure Tube "O"Ring
10	04700532		1	Tube Sleeve
11	04699183	03-02-01-03	2	Rear Cover To Case Stud
12	04694262	03-02-01-03	2	Rear Cover To Case Stud Lockwasher
13	04700251	03-02-01-03	2	Rear Cover To Case Stud Nut
14	04699573	03-02-01-03	1	Rear Cover Pipe Plug
15	04700829		1	Magnetic Drain Plug
16	04700473		1	Oil Level Plug
16a	55019755		1	Bore Plug - Not illustrated
17	04700473		1	Oil Level Plug
18	04700675		1	Screen Assembly
19	04700673		1	Screen Assembly Gasket
20	55019757		1	Trans. Case & Tube Assy - Inc. items 2, 3, 10, 22 Thru 27, 29 Thur 38, 60 - 63
20a	04700830	3		Transmission Case Plug - Not illustrated
21				Not Used on this Model
22				Not Used on this Model
23	04699186		1	Suction Tube Clip
24	04699070		1	Suction Tube Assembly
25	04698578		1	Pressure Tube "O"Ring
26	04699124		1	4th Speed Pressure Tube
27	04700532		1	Tube Sleeve
28	04698578		1	Pressure Tube "O"Ring
29	04700532		1	Tube Sleeve
30	04699125		1	4th Speed Clutch Lube Tube
31	04700664		1	Oil Distributor Retainer Ring
32	04699240		1	4th Clutch Front Oil Distributor & Plug Assembly
33	04699497		1	Locking Ball
34	04700664		1	Oil Distributor Retainer Ring
35	04699187		2	Suction Line Screw
36	04699188		1	Suction Line Washer
37	04694481		1	Suction Line "O"Ring
38	04696436		1	Suction Tube Clip Rivet
39				Not Used on this Model
40				Not Used on this Model
41				Not Used on this Model
42				Not Used on this Model

**PARTS MANUAL****TRANSMISSION CASE & REAR  
COVER GROUP**

03-02-01-02

**TRAN-2****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
43				Not Used on this Model
44				Not Used on this Model
45				Not Used on this Model
46				Not Used on this Model
47				Not Used on this Model
48				Not Used on this Model
49				Not Used on this Model
50				Not Used on this Model
51				Not Used on this Model
52				Not Used on this Model
53				Not Used on this Model
54				Not Used on this Model
55				Not Used on this Model
56				Not Used on this Model
57				Not Used on this Model
58				Not Used on this Model
59				Not Used on this Model
60	04696436	2		Rivet
61	04696411	1		Oil Baffle
62	04696412	1		Oil Baffle
63	04696436	2		Rivet
64	04696736	1		Bushing Speed Sensor
65	04696738			Shim Speed Sensor - Not illustrated
66	04696737	1		Plug Sensor
67	04694477	1		"O" Ring - Plug - Not illustrated

TRAN-3  
REV.**TRANSMISSION CASE REAR COVER****03-02-01-03**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    03-02-01-03**

Sandvik Underground Mining Flameproof Equipment

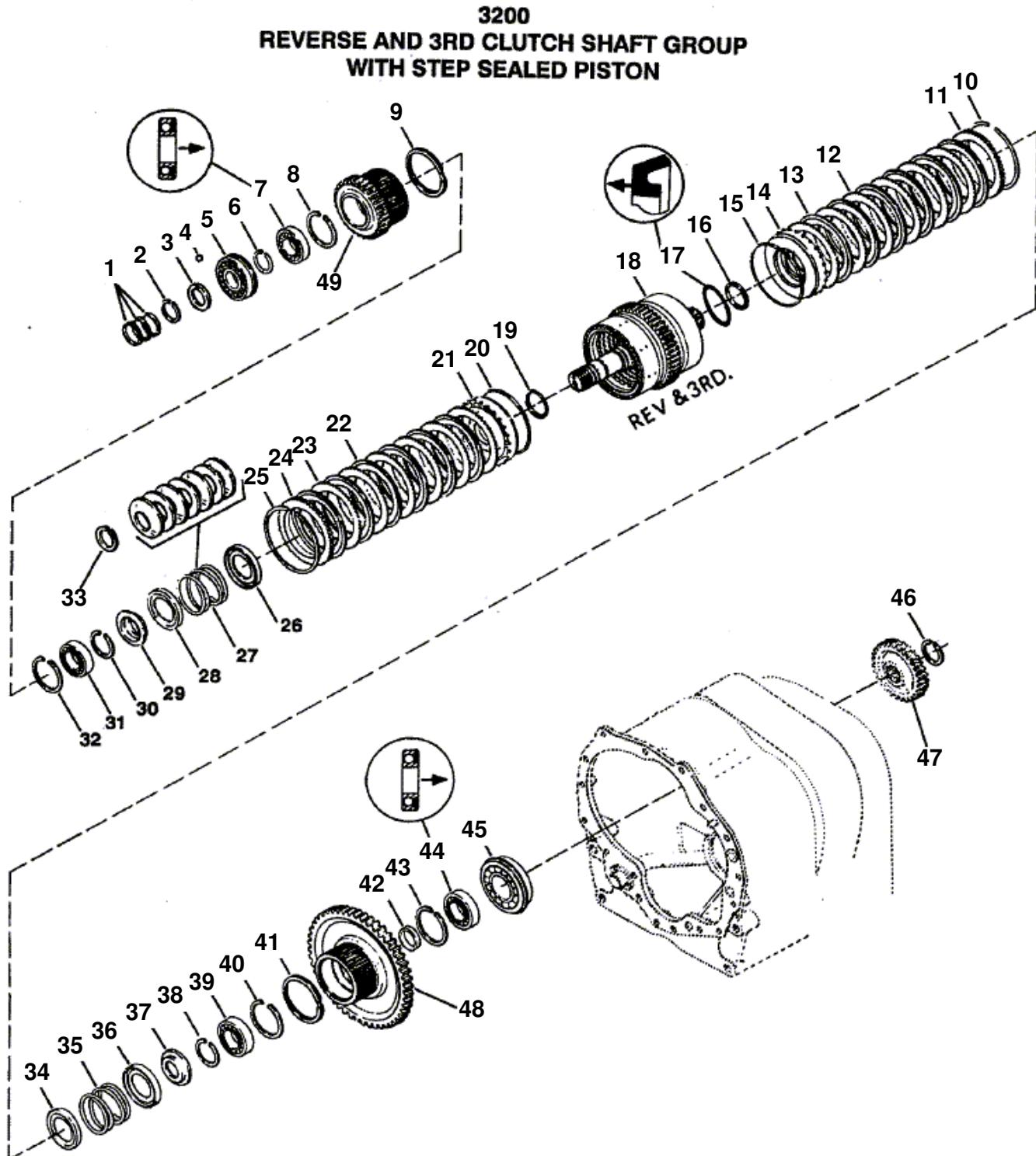
**PARTS MANUAL****TRAN-3****TRANSMISSION CASE REAR COVER****03-02-01-03****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04700674		1	Rear Cover Gasket
2	55019761		1	Rear Cover
3	04699181	21	1	Rear Cover To Case Screw
4	04694262	21	1	Rear Cover To Case Screw Lockwasher
5	04699573		1	Rear Cover Plug
6	04700251	2	1	Rear Cover To Case Stud Nut
7	04694262	2	1	Rear Cover To Case Stud Lockwasher
8	04699183		2	Rear Cover To Case Stud

TRAN-4  
REV.

## REVERSE &amp; HIGH SHAFT GROUP

03-02-01-04



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-02-01-04

Sandvik Underground Mining Flameproof Equipment

**TRAN-4**
**REVERSE & HIGH SHAFT GROUP**
**03-02-01-04**
**REV.**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	04697543	3	1	REVERSE & 3RD CLUTCH SHAFT PISTON RING
2	04694190	1	1	FRONT BEARING RETAINER RING
3	04699956	1	1	REVERSE & 3RD SHAFT FRONT BRG. END PLATE
4	04699957	1	1	REVERSE & 3RD SHAFT BRG. END PLATE BALL
5	04699958	1	1	REVERSE & 3RD SHAFT BRG. FRONT BEARING
6	04694190	1	1	FRONT BEARING RETAINER RING
7	04700679	1	1	CLUTCH DRIVEN GEAR BEARING-SHEILD IN
8	04700680	1	1	CLUTCH DRIVEN GEAR BEARING SNAP RING
9	04698529	1	1	CLUTCH HUB OIL BAFFLE RING
10	04700858	1	1	END PLATE RETAINER RING
11	04696438	1	1	END PLATE - 3RD CLUTCH
12	04700648	7	1	CLUTCH OUTER DRIVE - 3RD CLUTCH
13	04699959	7	1	CLUTCH INNER DISC - 3RD CLUTCH
14	56032477	1	1	CLUTCH PISTON ASSEMBLY - 3RD CLUTCH
15	04700649	1	1	CLTUCH PISTON OUTER SEAL
16	04700650	1	1	CLTUCH PISTON INNER SEAL
17	56008430	1	1	CLUTCH PISTON METERING SEAL
18	56039301	1	1	REVERSE & 3RD CLUTCH DRUM & PLUG ASSY
19	04700650	1	1	CLUTCH PISTON INNER SEAL
20	04700649	1	1	CLUTCH PISTON OUTER SEAL
21	04694144	1	1	CLTUCH PISTON ASSEMBLY - REVERSE CLUTCH
22	04699959	6	1	CLUTCH INNER DISC 0 REVERSE CLUTCH
23	04700648	6	1	CLUTCH OUTER DISC - REVERSE CLUTCH
24	04698137	1	1	END PLATE - REVERSE CLUTCH
25	04700858	1	1	END PLATE RETAINER RING
26				NOT USED ON THIS MODEL
27	04697544	1	1	ASSEMBLY BELLEVILLE WASHER
28				NOT USED ON THIS MODEL
29	04699961	1	1	SPRING RETAINER - SNAP RING RETAINER
30	04699604	1	1	SPRING RETAINER SNAP RING
31	64109963	1	1	CLUTCH DRIVEN GEAR BEARING
32	04700680	1	1	CLUTCH DRIVEN GEAR BEARING
33				NOT USED ON THIS MODEL
34	04700896	1	1	SPRING RETAINER
35	04700682	1	1	PISTON RETURN SPRING
36	04700897	1	1	SPRING RETAINER
37	04699961	1	1	SPRING RETAINER SNAP RING RETAINER
38	04699604	1	1	SPRING RETAINER SNAP RING
39	04700683	1	1	3RD GEAR BEARING
40	04700684	1	1	3RD GEAR BEARING SNAP RING
41	04698529	1	1	CLUTCH HUB OIL BAFFLE RING
42	04699053	1	1	3RD GEAR BEARING SPACER
43	04700684	1	1	3RD GEAR BEARING SNAP RING
44	04700685	1	1	3RD GEAR BEARING - SHEILD OUT
45	04699962	1	1	REVERSE & 3RD SHAFT REAR BEARING
46	04699049	1	1	GEAR RETAINING RING



## PARTS MANUAL

TRAN-4

REVERSE & HIGH SHAFT GROUP

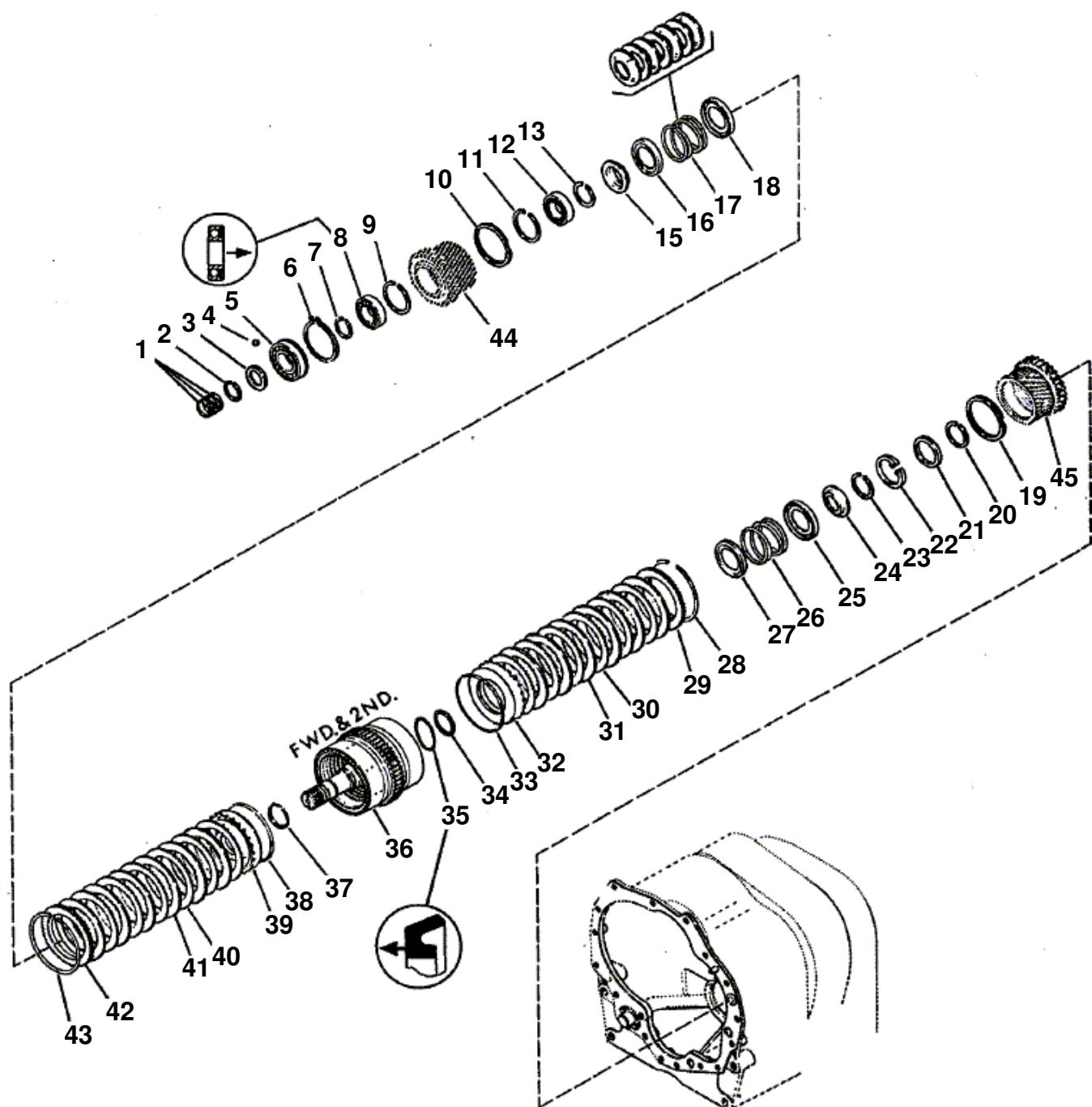
03-02-01-04

REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
47	04691634	1	1	LOW CLUTCH DRIVE GEAR - LOW DRIVE 26T
48	04699126	1	1	3RD GEAR - HIGH RANGE 52T
49	04699963	1	1	CLUTCH DRIVEN GEAR - CLUTCH DRIVE 26T

TRAN-5  
REV.**FORWARD & 2ND CLUTCH SHAFT  
GROUP**

03-02-01-05

**32000 FORWARD & 2ND CLUTCH SHAFT GROUP  
WITH STEP SEALED PISTON**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-02-01-05

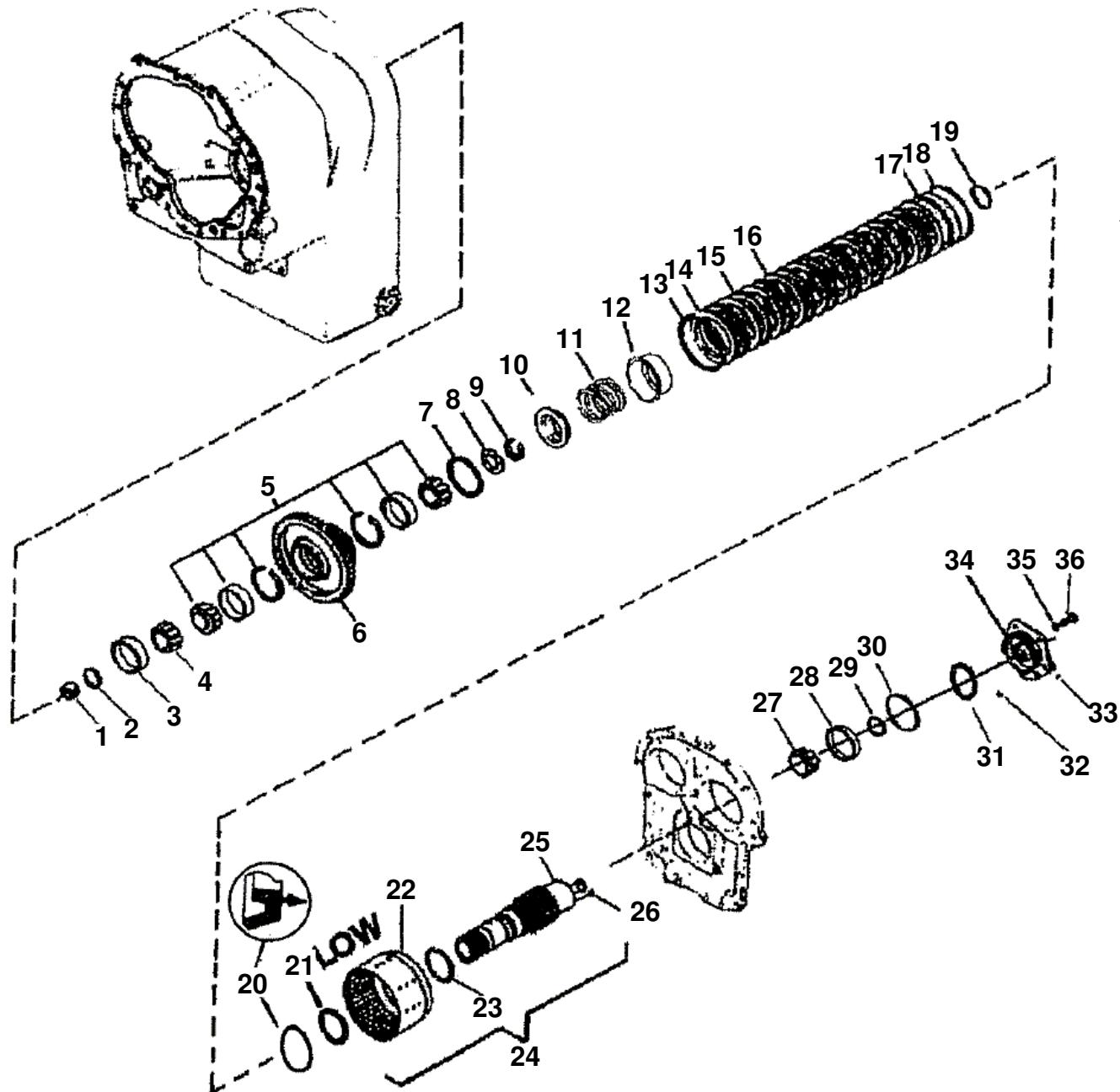
Sandvik Underground Mining Flameproof Equipment

**FORWARD & 2ND CLUTCH SHAFT  
GROUP**
**03-02-01-05**
**TRAN-5**
**REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04697543		1	FORWARD & 2ND SHAFT PISTON RING
2	04694190		1	FRONT BEARING RETAINER RING
3	04699956		1	FORWARD & 2ND SHAFT FRONT BEARING END PLATE
4	04699957		1	FORWARD & 2ND SHAFT FRONT BEARING PLATE BALL
5	04699958		1	FORWARD & 2ND SHAFT FRONT BEARING
6	04700792		1	FRONT BEARING LOCATING RING
7	04694190		1	FRONT BEARING RETAINER RING
8	04700679		1	CLUTCH DRIVEN GEAR BEARING - SHIELD IN
9	04700680		1	CLUTCH DRIVEN GEAR BEARING SNAP RING
10	04698529		1	CLUTCH HUB OIL BAFFLE RING
11	04700680		1	C;UTCH DRIVEN GEAR EBARING SNAP RING
12	64109963		1	CLUTCH DRIVEN GEAR BEARING
13	04699604		1	SPRING RETAINER SNAP RING
14				NOT USED ON THIS MODEL
15	04699961		1	SPRING RETAINER - SNAP RING RETAINER
16				NOT USED ON THIS MODEL
17	04697544		1	PISTON RETURN SPRING
18				NOT USED ON THIS MODEL
19	04698529		1	CLUTCH HUB OIL BAFFLE RING
20	04699604		1	2ND GEAR RETAINER RING
21	04693996		1	2ND GEAR LOCATING RING REATINER
22	04699111		1	2ND GEAR LOCATING RING RETAINER SNAP RING
23	04699604		1	SPRING PISTON SNAP RING
24	04699961		1	SPRING RETAINER - SNAP RING RETAINER
25	04700897		1	SPRING RETAINER
26	04700682		1	PISTON RETURN SPRING
27	04700896		1	SPRING RETAINER
28	04700858		1	END PLATE RETAINER RING
29	04696438		1	END PLATE - 2ND CLUTCH
30	04700648	7	1	CLUTCH OUTER DISC - 2ND CLUTCH
31	04699959	7	1	CLUTCH INNER DISC - 2ND CLUTCH
32	56032477		1	CLUTCH PISTON ASEMBLY - 2ND CLUTCH
33	04700649		1	CLUTCH PISTON OUTER SEAL
34	04700650		1	CLUTCH PISTON INNER SEAL
35	56008430		1	CLUTCH PISTON METERING SEAL
36	56039302		1	FORWARD & 2ND SHAFT, CLUTCH DRUM & PLUG ASSY
37	04700650		1	CLUTCH PISTON INNER SEAL
38	04700649		1	CLUTCH PISTON OUTER SEAL
39	04694144		1	CLUTCH PISTON ASSEMBLY - FWD. CLUTCH
40	04700648	6	1	CLUTCH OUTER DISC - FWD. CLUTCH
41	04699959	6	1	CLUTCH INNER DISC - FWD. CLUTCH
42	04698137	1	1	END PLATE - FWD. CLUTCH
43	04700858	1	1	END PLATE RETAINER RING
44	04699963	1	1	FORWARD CLUTCH DRIVEN GEAR
45	04699966	1	1	2ND GEAR

TRAN-6  
REV.**SHAFT GROUP**

03-02-01-06



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-02-01-06

Sandvik Underground Mining Flameproof Equipment

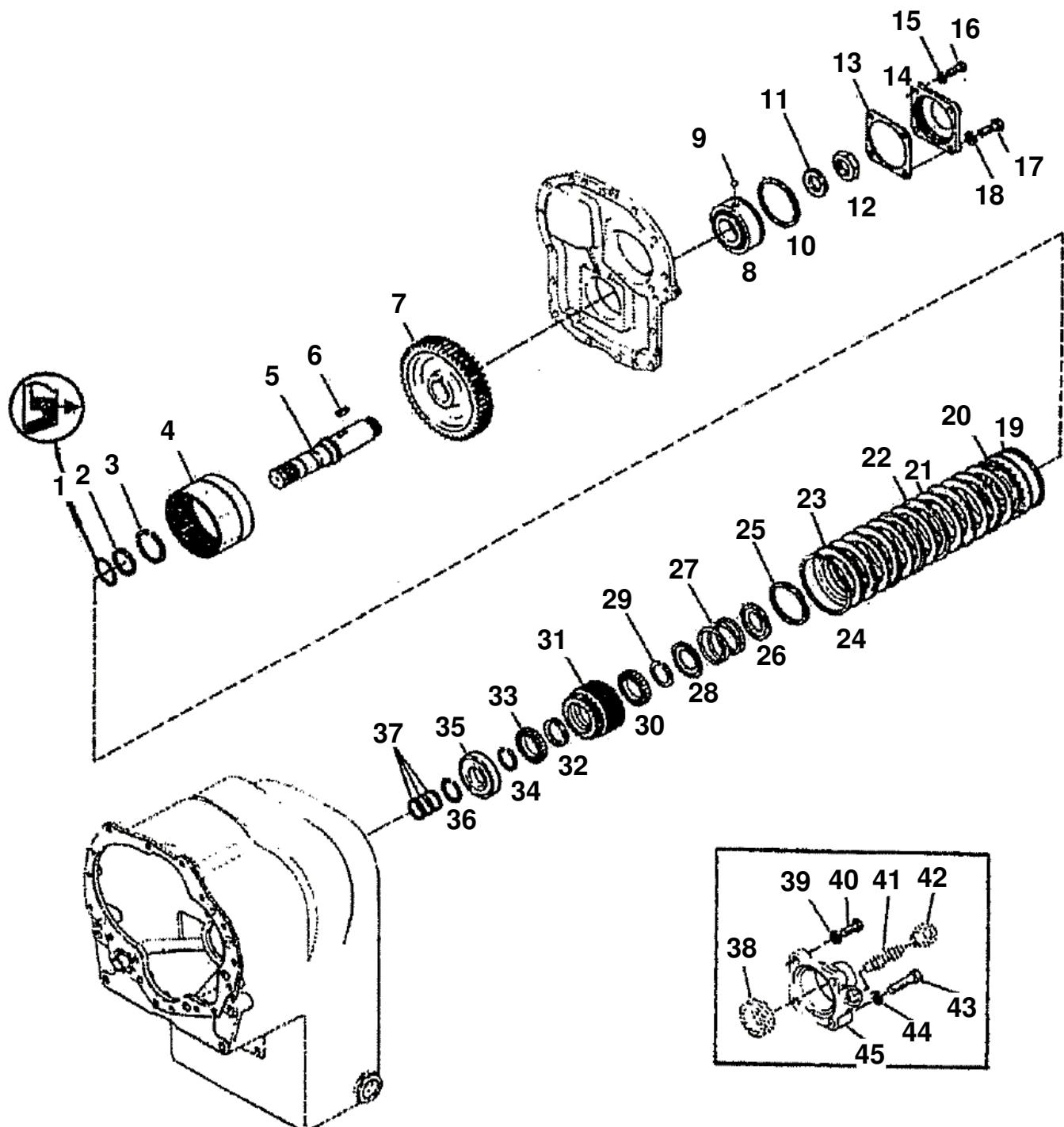
**TRAN-6**
**SHAFT GROUP**
**03-02-01-06**
**REV.**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	04700693		1	Forward & 2nd Shaft Pilot Bearing
2				NOT USED ON THIS MODEL
3	55019785		1	LOW SHAFT FRT BEARING CUP
4	55019786		1	LOW SHAFT FRT BEARING CONE
5	55019781		1	LOW SPEED GEAR BEARING ASSEMBLY
6	55016777		1	LOW SPEED GEAR - 54T
7	04698529		1	CLUTCH HUB OIL BAFFLE RING
7A	55019783		1	Washer - Brg. Spacer
8	55019780		1	SPRING RETAINING RING RETAINER
9	04700860		1	Spring Retaining Ring
10	55019778		1	SPRING RETAINER
11	55019777		1	Spring - Wave
12	04698258		1	Retainer - Wave Spring
13	04700858		1	END PLATE RETAINER PLUG
14	04699091		1	END PLATE
15	04700651		9	CLUTCH INNER DISC
16	04700648		9	CLUTCH OUTER DISC
17	56038833		1	CLUTCH PISTON ASSEMBLY
18	04700649		1	Clutch Piston Outer Seal
19	04700650		1	CLUTCH PISTON INNER SEAL
20	56008430		1	Seal - Clutch Piston Metering
21	04696742		1	Low Clutch Hub Retaining Ring
22	56008898		1	Low Clutch Hub & Drum Assembly
23	55019792		1	Low Drum & Shaft O-ring
24	56008896		1	Low Shaft & Drum Assembly - Inc Items 21 Thru 26
25	55019793		1	LOW SPEED SHAFT
26	55017352		1	LOW SPEED SHAFT PLUG
27	04699979		1	Low Shaft Rear Bearing Cone
28	04698633		1	LOW SPEED SHAFT REAR BEARING CUP
29	04699238		1	Low Shaft Pressure Piston Ring
30	55019805		1	Rear Bearing Cap O-ring
31	55019796		1	BEARING CAP SHIM - 004
31A	55019798		1	BEARING CAP SHIM - 007
31B	55019802		1	BEARING CAP SHIM - 010
31C	55019803		1	BEARING CAP SHIM - 020
32	04697275		1	O-ring Pressure Tube
33	04699573		1	REAR BEARING CAP PLUG
34	55019804		1	REAR BEARING CAP
35	64404377		5	REAR BEARING CAPSCREW LOCKWASHER
36	04700983		5	REAR BEARING CAPSCREW

TRAN-7  
REV.

IDLER SHAFT & 4TH SPEED  
CLUTCH GROUP

03-02-01-07



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-02-01-07

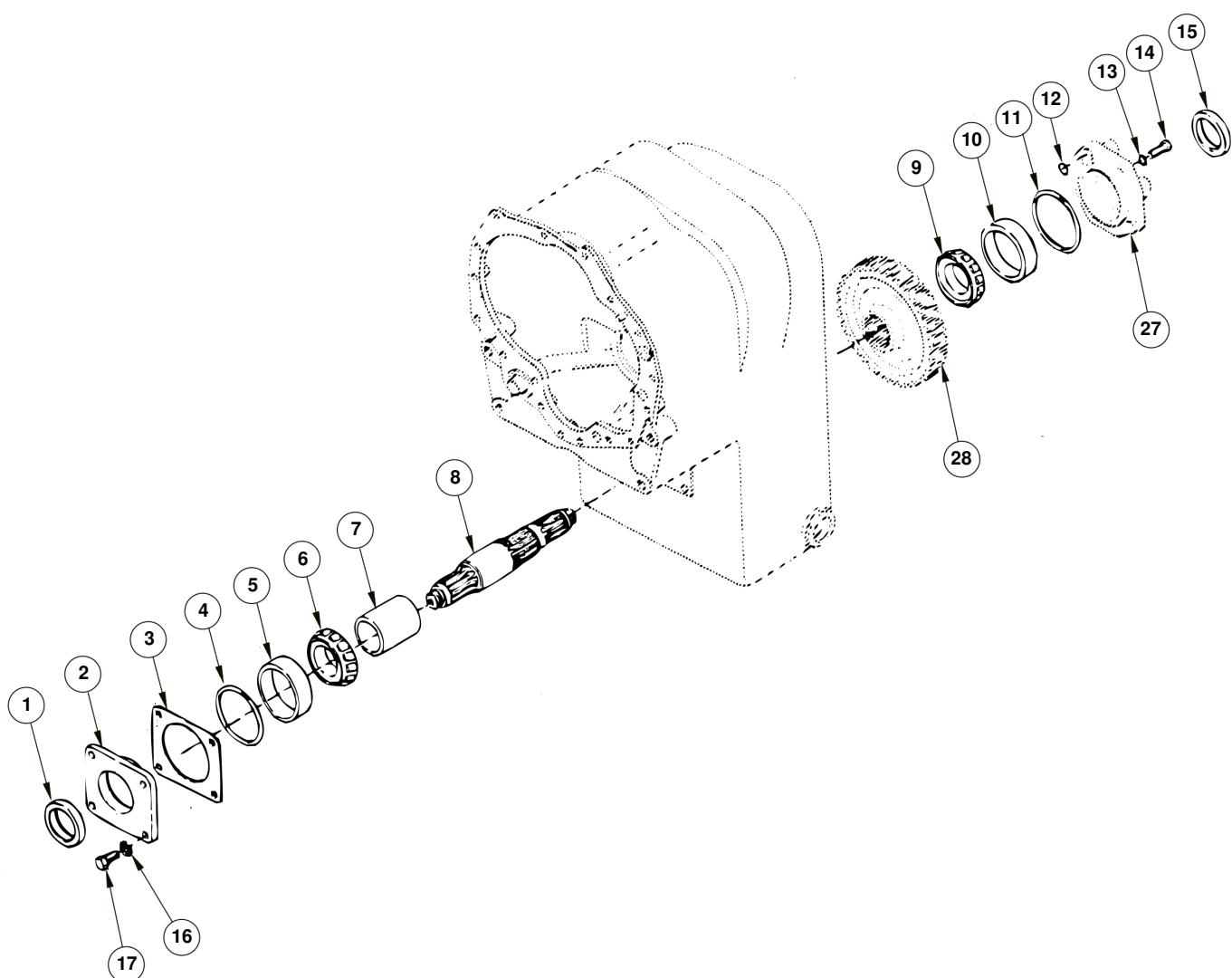
Sandvik Underground Mining Flameproof Equipment

**IDLER SHAFT & 4TH SPEED  
CLUTCH GROUP**

03-02-01-07

**TRAN-7****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	56008430		1	Seal - Clutch Piston Metering
2	04700650		1	CLUTCH PISTON INNER SEAL
3	04698623		1	4TH CLUTCH DRUM LOCATING RING
4	56008897		1	4TH CLUTCH DRUM & HUB ASSEMBLY
5	04699973		1	IDLER SHAFT & PLUG ASSEMBLY
6	04699216		1	IDLER SHAFT GEAR KEY
7	04699974		1	IDLER SHAFT GEAR
8	04699975		1	IDLER SHAFT REAR BEARING ASSEMBLY
9	04699077		1	IDLER SHAFT REAR BEARING LOCK BALL
10	04700921		1	REAR BEARING LOCATING RING
11	04699976		1	IDLER SHAFT WASHER
12	04699063		1	IDLER SHAFT NUT
13	04700793		1	IDLER SHAFT BEARING CAP GASKET
14	04699977		1	IDLER SHAFT BEARING CAP
15	04699206		4	BEARING CAPSCREW LOCKWASHER
16	04697250		4	BEARING CAPSCREW
17				NOT USED ON THIS MODEL
18				NOT USED ON THIS MODEL
19	04700649		1	CLUTCH PISTON OUTER SEAL
20	56038833		1	CLUTCH PISTON ASSEMBLY
21	04700648		6	CLUTCH OUTER DISC
22	04699959		6	CLUTCH INNER DISC
23	04699091		1	CLUTCH DISC BACKING PLATE
24	04700858		1	BACKING PLATE SNAP RING
25	04698529		1	OIL BAFFLE RING
26	04700896		1	SPRING RETAINER
27	04700682		1	PISTON RETURN SPRING
28	04700897		1	SPRING RETRAINER
29	04700791		1	BEARING SNAP RING
30	04700794		1	4TH GEAR BEARING
31	55016776		1	4TH GEAR
32	04699130		1	4TH GEAR SPACER
33	04700794		1	4TH GEAR BEARING
34	04700791		1	4TH GEAR BEARING SNAP RING
35	04700777		1	IDLER SHAFT FRONT BEARING
36	04700791		1	4TH GEAR FRONT BEARING SNAP RING
37	04696752		3	4TH GEAR PISTON RING

TRAN-8  
REV.**OUTPUT SHAFT GROUP****03-02-01-08**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION **03-02-01-08**

Sandvik Underground Mining Flameproof Equipment

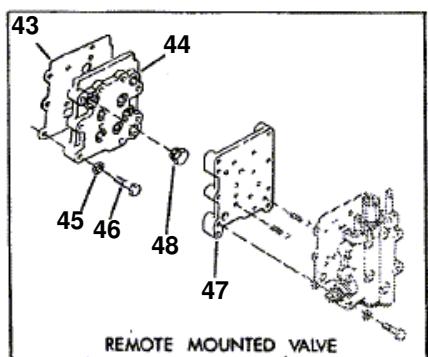
**TRAN-8****OUTPUT SHAFT GROUP****03-02-01-08****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04699978		1	FRONT BEARING CAP OIL SEAL
2	04699212		1	FRONT BEARING CAP
3	04700642		A/R	BEARING CAP SHIM (.004)
3A	04699064		A/R	BEARING CAP SHIM (.007)
3B	04700643		A/R	BEARING CAP SHIM (.010)
3C	04699065		A/R	BEARING
4	04700880		1	FRONT BEARING CAP O_RING
5	04698631		1	FRONT BEARING CUP
6	04698632		1	FRONT BEARING CONE
7	04699980		1	OUTPUT SHAFT GEAR SPACER
8	04699981		1	OUTPUT SHAFT
9	04698632		1	REAR BEARING CONE
10	04698633		1	REAR BEARING CUP
11	64401605		1	REAR BEARING CAP O_RING
12	04700638		1	REAR BEARING CAP O_RING
13	04694367		4	REAR BEARING CAPSCREW LOCKWASHER
14	04699241		4	REAR BEARING CAPSCREW
15	04699978		1	REAR BEARING CAP OIL SEAL
16	04699206		4	FRONT BEARING CAPSCREW LOCKWASHER
17	04699207		4	FRONT BEARING CAPSCREW
18				NOT USED ON THIS MODEL
19				NOT USED ON THIS MODEL
20				NOT USED ON THIS MODEL
21				NOT USED ON THIS MODEL
22				NOT USED ON THIS MODEL
23				NOT USED ON THIS MODEL
24				NOT USED ON THIS MODEL
25				NOT USED ON THIS MODEL
26				NOT USED ON THIS MODEL
27	04699982	1	1	Cap - Output Rear Bearing Cap
28	04699983	1	1	Gear - Output 38T

**04695690  
REV.**

**CONTROL VALVE ASSEMBLY, LESS  
DECLUTCH - HEAVY SPRINGS  
REMOTE MOUNTED - 4 SPEED**

**03-02-01-09**

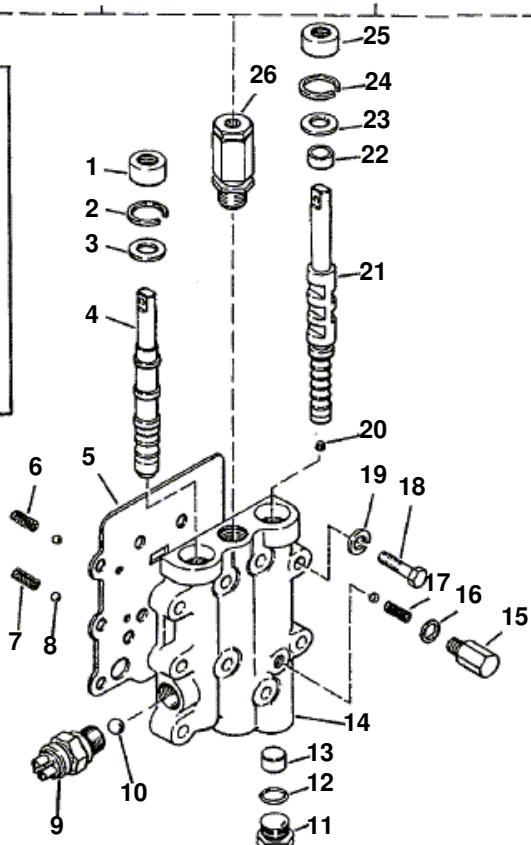


**NOTE:**

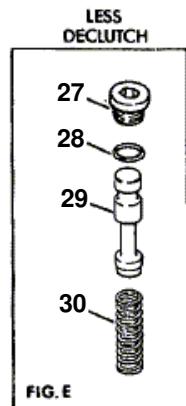
Speed selector spacers (Items 13 and 22) and the declutch valve (Item 26) are not included when the control valve housing assembly (Item 14) is ordered.

When ordering the control valve housing assembly (Item 14) from the Service Parts List also order the spacer or spacers listed as Items 13 and 22 and the declutch valve, spool and spring needed. NOTE: Some valves will require no spacers, some valves will require 1 spacer and some will require 2 spacers. See information chart on reverse side.

Refer to Service Parts List for correct spacers and declutch valves to be ordered.



**CONTROL VALVE ASSEMBLY  
(HYDRAULIC DECLUTCH)**



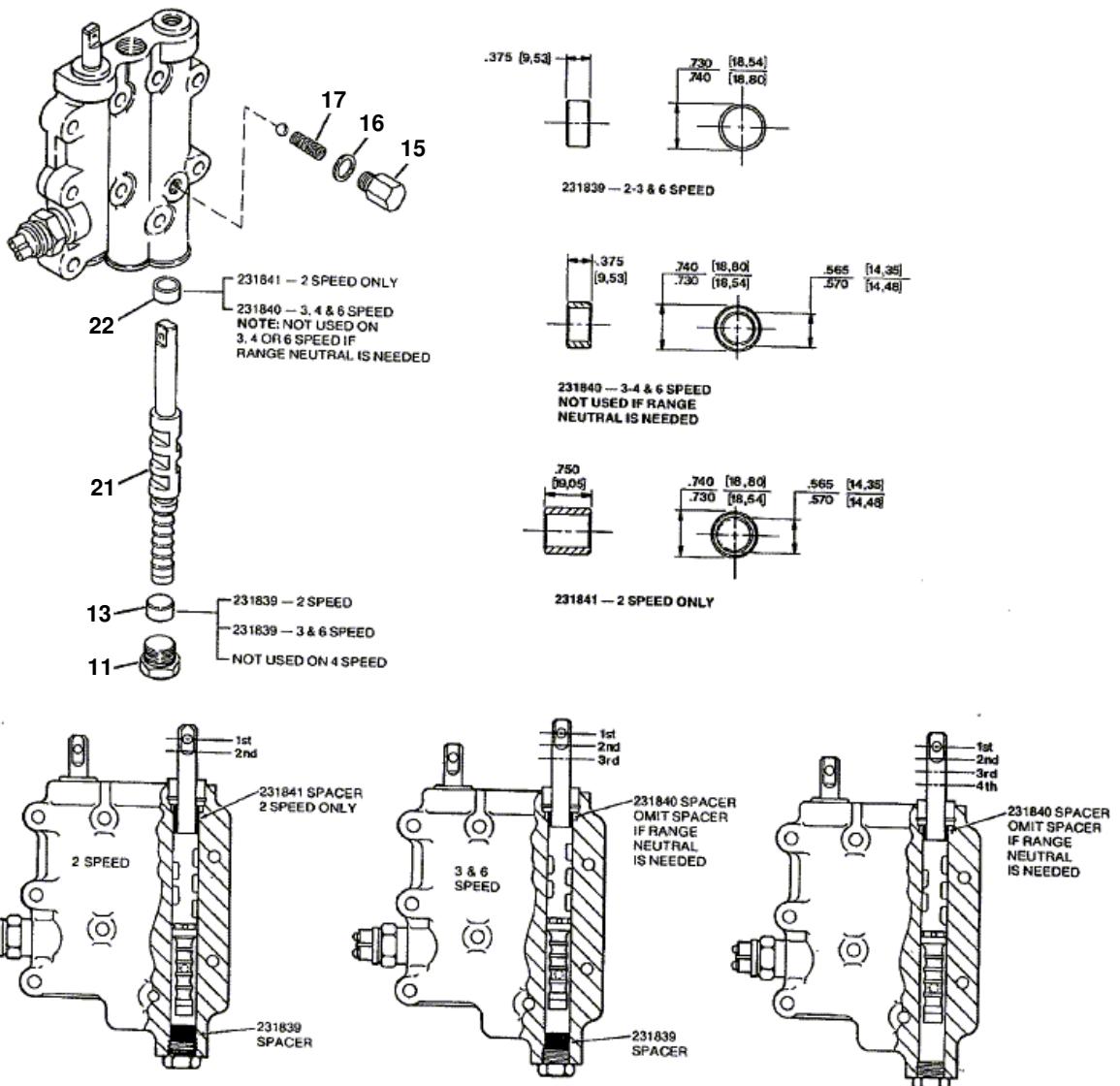
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    03-02-01-09**

Sandvik Underground Mining Flameproof Equipment

04695690  
REV.CONTROL VALVE ASSEMBLY, LESS  
DECLUTCH - HEAVY SPRINGS  
REMOTE MOUNTED - 4 SPEED

03-02-01-09



## SPACER INSTALLATION

1. Remove detent spring plug (item 15), washer (item 16), detent spring (item 17) and detent ball.
2. Remove valve housing plug (item 11).
3. Remove speed selector spool (item 21) from valve housing.
4. Position spacer no. 22 (see Parts List for part no.) over end of speed selector that has the hole for the control lever linkage pin.
5. Install speed selector and spacer in valve housing. **Caution:** Do not cut lip of oil seal or turn lip under when inserting selector spool through oil seal.
6. Install spacer item no. 13 (part no. 231839) in speed selector bore. **Note:** this spacer not used on a four speed transmission.
7. Install valve housing plug (item no. 11). Tighten securely.
8. Install detent ball, detent spring (item 17), washer (item 16) and detent spring plug (item 15). Tighten plug securely.

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-02-01-09

Sandvik Underground Mining Flameproof Equipment

**CONTROL VALVE ASSEMBLY, LESS  
DECLUTCH - HEAVY SPRINGS  
REMOTE MOUNTED - 4 SPEED**

03-02-01-09

**04695690****REV.**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	04700652		1	Valve Spool Oil Seal
2	04700385		1	Valve Spool Oil Seal Retainer Ring
3	04699222		1	Valve Spool Oil Seal Washer
4	04699059		1	Forward & Reverse Valve Spool
5	04697584		1	Control Valve Gasket
6	04699122		1	Detent Spring
7	04699122		1	Detent Spring
8	04700457		3	Detent Ball
9	04700437		1	Neutral Switch
10	04700457		1	Neutral Switch Detent Ball
11	04699223		1	Valve Housing Plug
12	64401556		1	Valve Hsg. Plug "O" Ring
13				Not Used on this Model
14	04698154		1	Control Valve Housing Assy - Incl. Items 7 thru 4, 9 thru 12, 20, 21, 23, 24 ,25
15	04699224		1	Detent Spring Plug
16	04699225		1	Detent Spring Plug Washer
17	04699122		1	Detent Spring
18	04699177		9	Valve to Convertor Hsg. Screw
19	64404377		9	Valve to Convertor Hsg. Screw Lockwasher
20	04699678		1	Speed Selector Spool Pipe Plug
21	04698155		1	Speed Selector Spool, Inc. Item 20
22	04699227		1	Overshift Spacer
23	04699222		1	Valve Spool Oil Seal Washer
24	04700385		1	Valve Spool Oil Seal Retainer Ring
25	04700652		1	Valve Spool Oil Seal
26				Not Used on this Model
27	04699223		1	Stop Plug
28	64401556		1	Stop Plug "O" Ring
29	04699058		1	Valve Spool
30	04700653		1	Control Valve Spring
31				Not Used on this Model
32				Not Used on this Model
33				Not Used on this Model
34				Not Used on this Model
35				Not Used on this Model
36				Not Used on this Model
37				Not Used on this Model
38				Not Used on this Model
39				Not Used on this Model
40				Not Used on this Model
41				Not Used on this Model
42				Not Used on this Model

**CONTROL VALVE ASSEMBLY, LESS  
DECLUTCH - HEAVY SPRINGS  
REMOTE MOUNTED - 4 SPEED****03-02-01-09****04695690****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
43		03-02-01-16		Control Valve Plate Gasket - See Remote Valve Adaptor Plate Group
44		03-02-01-16		Control Valve Plate - See Remote Valve Adaptor Plate Group
45		03-02-01-16		Valve Plate to Cover Screw Lockwasher Remote Valve Adaptor Plate Group
46		03-02-01-16		Valve Plate to Front Cover Screw - See Remote Valve Adaptor Plate Group
47	64113716		1	Control Valve Mounting Plate
48		03-02-01-16		Valve Plate Plug - See Remote Valve Adaptor Plate Group

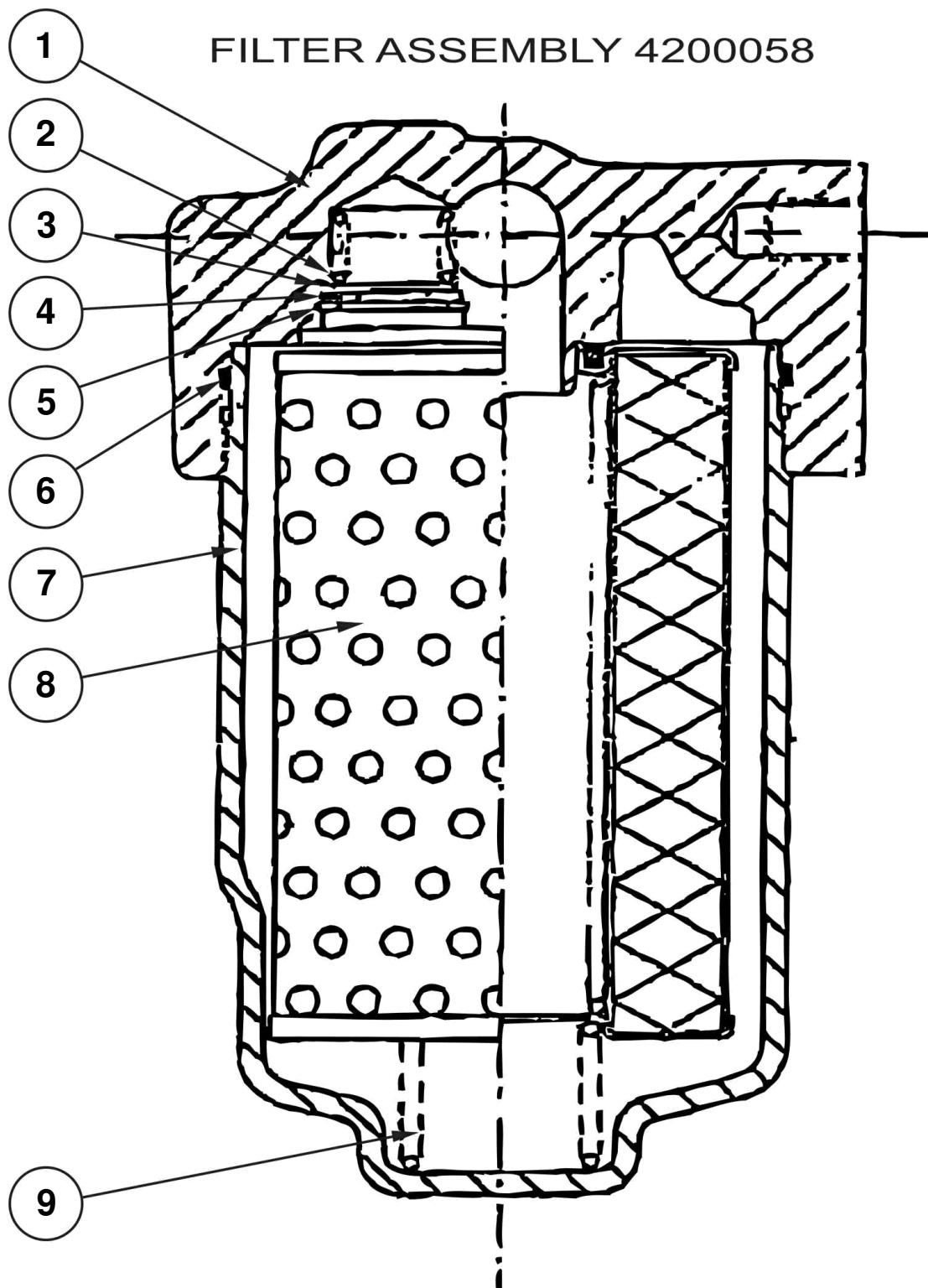
Note:- For Items 27 - 30 Use Figure "E"

04699373

**FILTER ASSEMBLY**

03-02-01-12

REV. 1



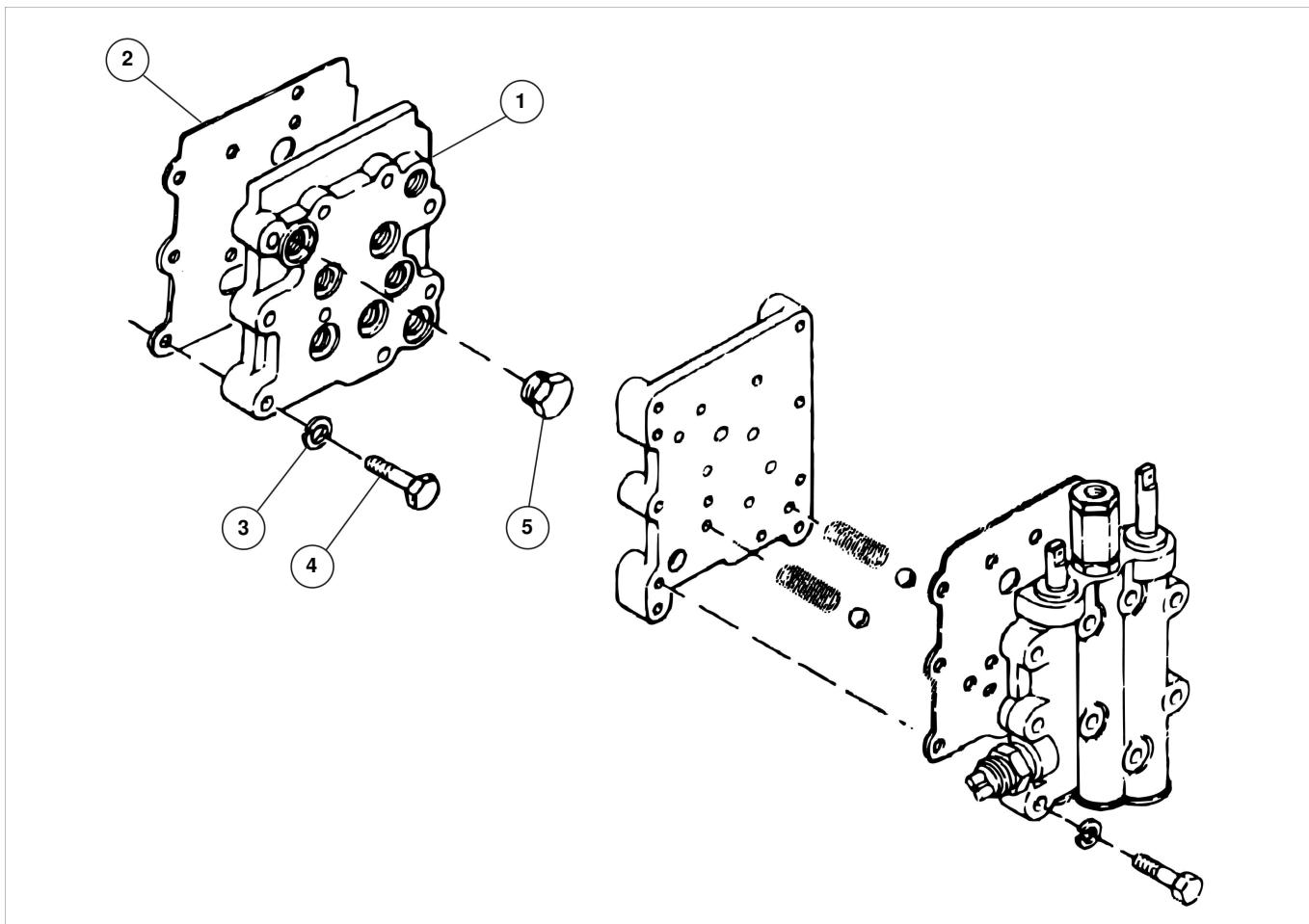
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-02-01-12

Sandvik Underground Mining Flameproof Equipment

**04699373****FILTER ASSEMBLY****03-02-01-12****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	CL4200057	1		Filter Adaptor
2	CL230959	1		Bypass Filter Disc Spring
3	CL230960	1		Bypass Filter Disc
4	CL230961	1		Bypass Filter Seat
5	CL230965	1		Bypass Filter Seat Retaining Ring
6	CL25K-40404	1		"O" Ring Inc. In Item 8
7	CL230964	1		Filter Housing
8	CL244530	1		Filter Element Assembly Inl. Item 6.
9	CL230963	1		Spring

TRAN-10  
REV.**ADAPTOR PLATE GROUP W/  
MODULATION****03-02-01-16**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION **03-02-01-16**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****ADAPTOR PLATE GROUP W/  
MODULATION**

03-02-01-16

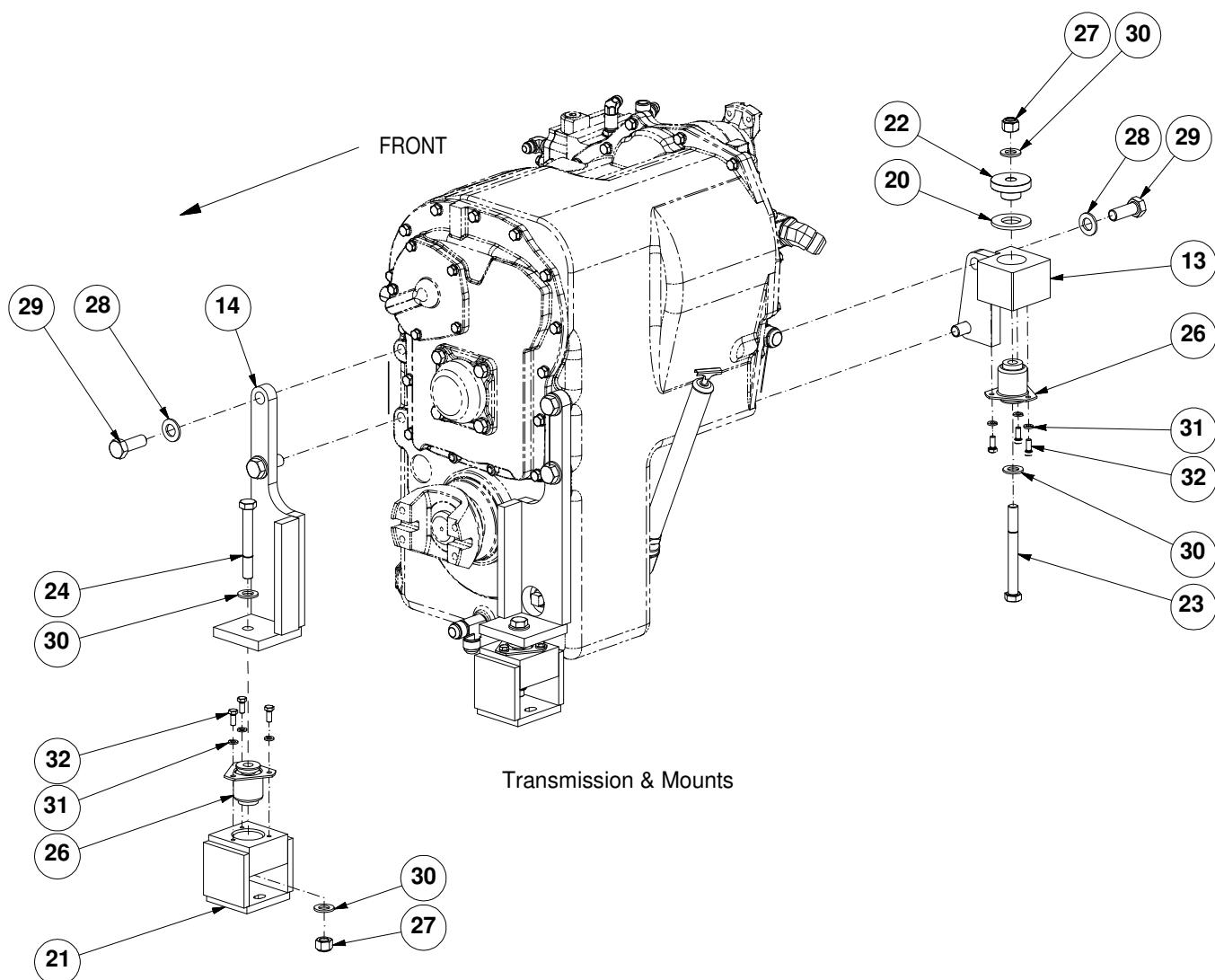
**TRAN-10****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04697761		1	Remote Control Valve Adaptor Plate
2	04697584		1	Adaptor Plate Gasket
3	64404377		9	Adaptor Plate Mounting Screw Lockwasher
4	04699997		9	Adaptor Plate Mounting Screw
5	04699572		1	Supply Plug
6	04692181		1	Drain Plug - Not illustrated
7	56008782		5	Shipping Plug - Not illustrated
8	04699808		1	Plate Plug - 4th - Not illustrated

**A2U130-330045**  
**REV. 1**

**TRANS. MOUNTS ASSY. LS170/  
LS190**

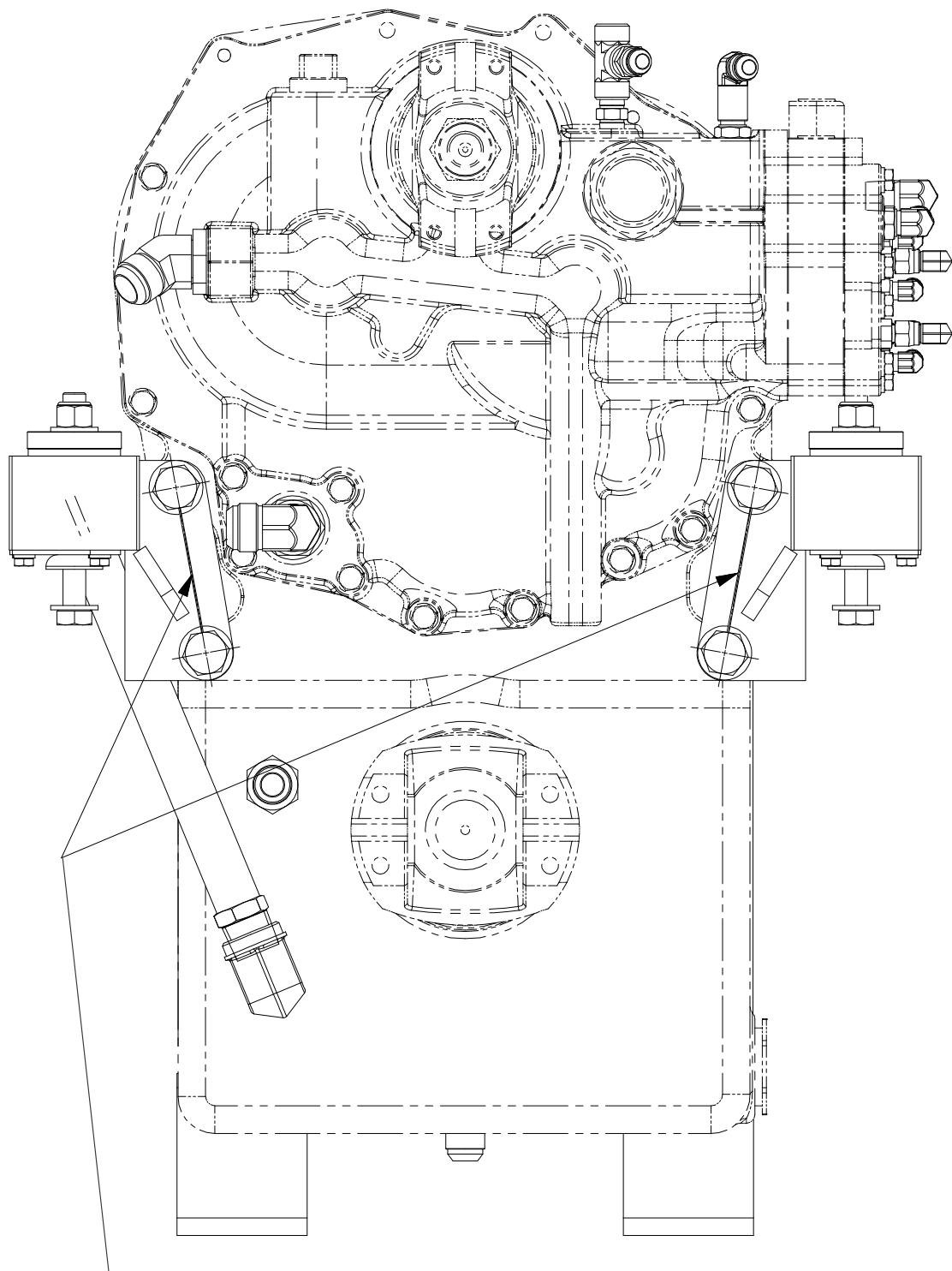
**03-02-02**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    03-02-02**

Sandvik Underground Mining Flameproof Equipment

**A2U130-330045****TRANS. MOUNTS ASSY. LS170/  
LS190****03-02-02****REV. 1**

WIRE THROUGH TRANSMISSION MOUNTING BOLTS WITH

(302/304 STAINLESS LOCK WIRE 0.041" / 1.04 mm DIA)

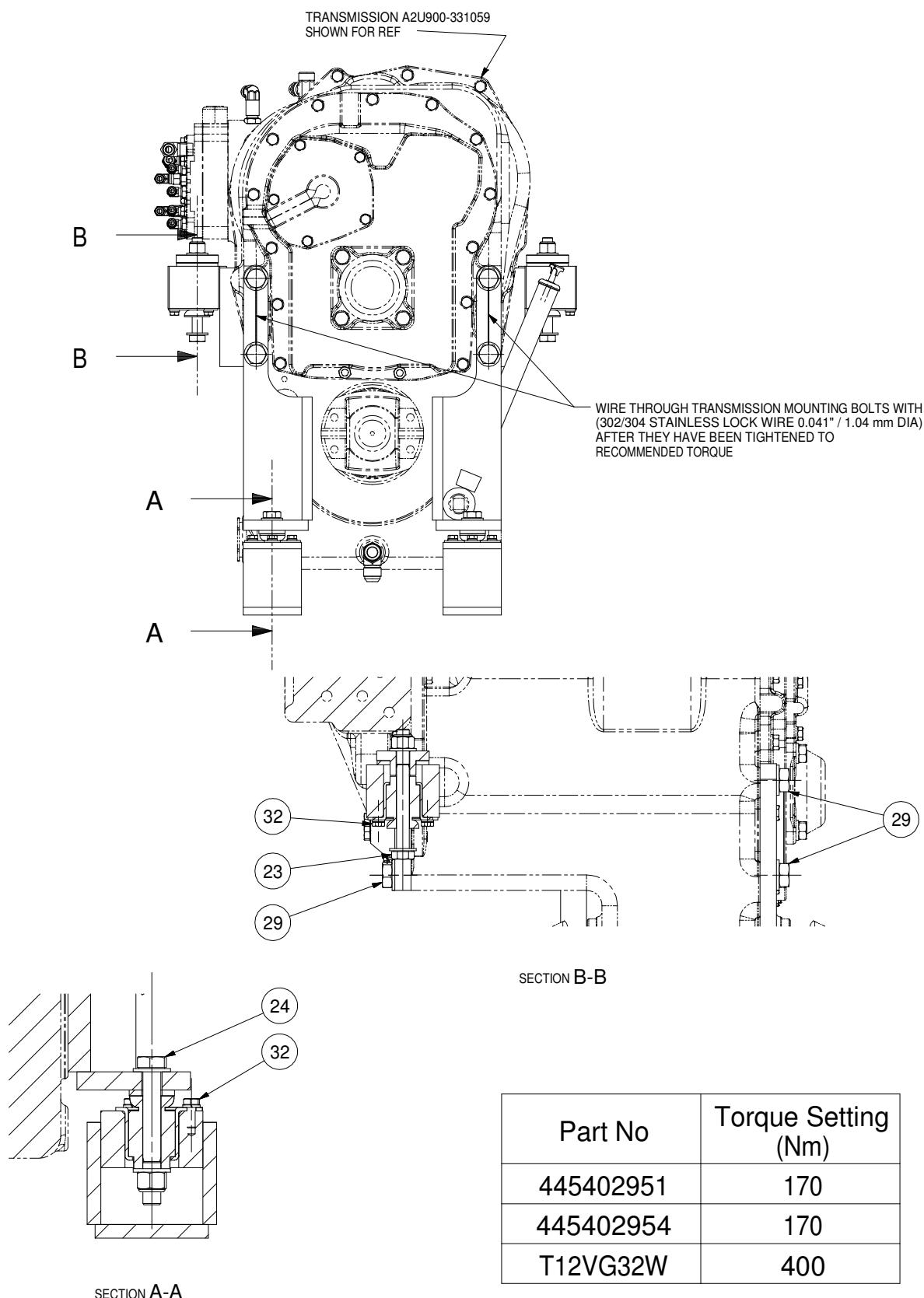
AFTER THEY HAVE BEEN TIGHTENED TO

RECOMMENDED TORQUE

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 03-02-02**

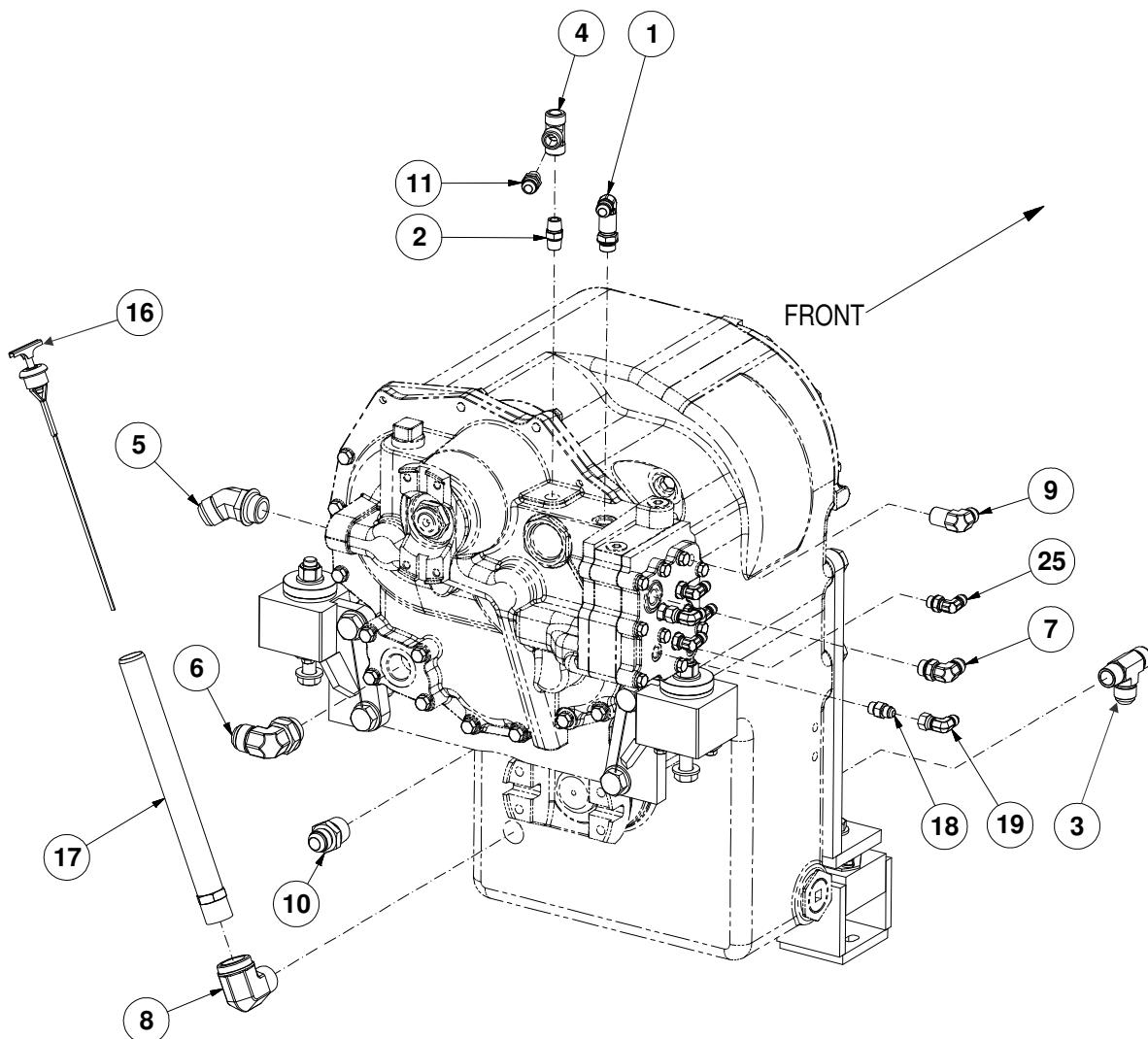
Sandvik Underground Mining Flameproof Equipment

**A2U130-330045**
**TRANS. MOUNTS ASSY. LS170/  
LS190**
**03-02-02**
**REV. 1**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 03-02-02**
**Sandvik Underground Mining Flameproof Equipment**

**A2U130-330045**  
**REV. 1**

**TRANS. MOUNTS ASSY. LS170/  
LS190**

**03-02-02**



Transmission & Hydraulic Fittings

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    03-02-02**

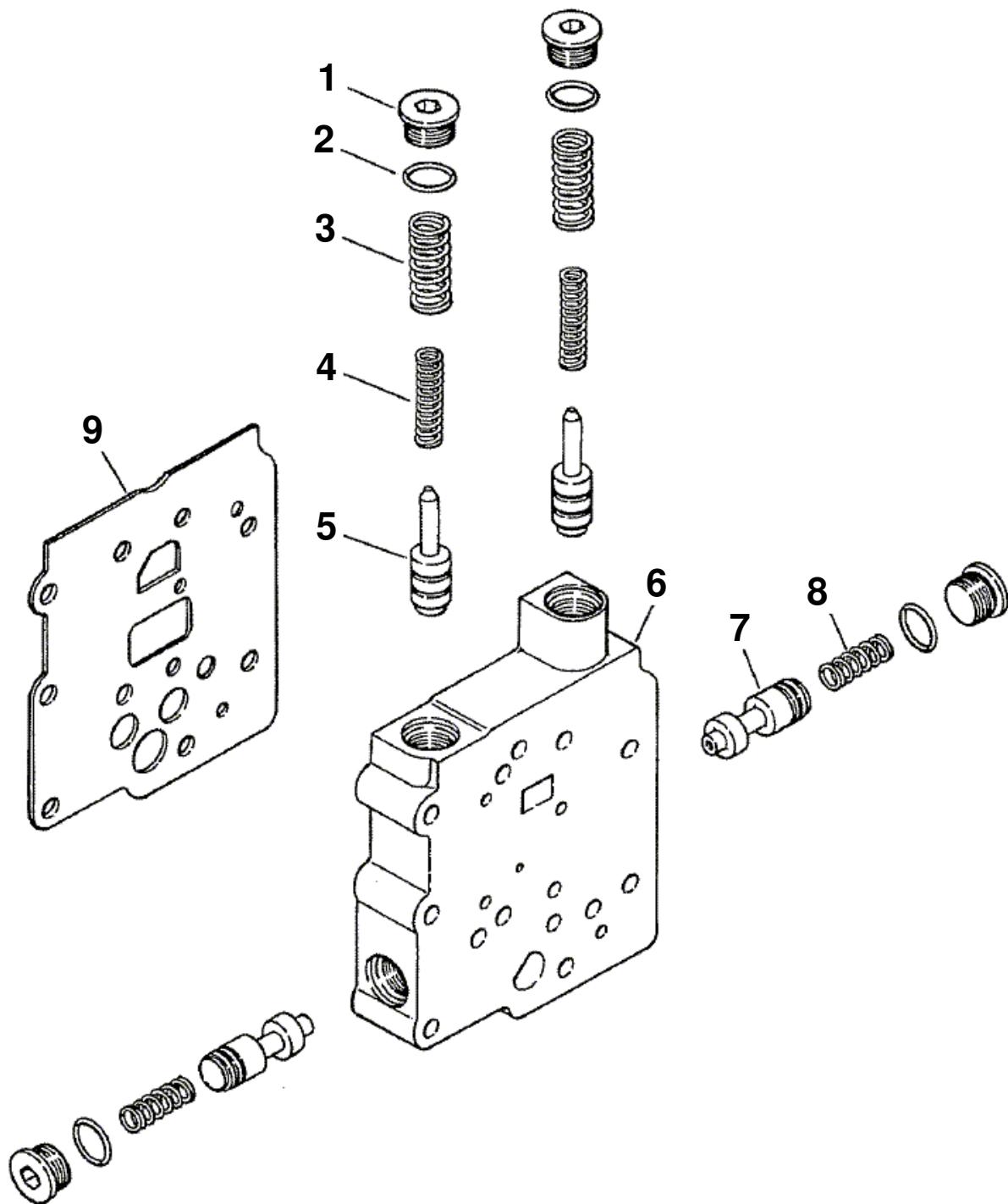
Sandvik Underground Mining Flameproof Equipment

**TRANS. MOUNTS ASSY. LS170/  
LS190**
**03-02-02**
**A2U130-330045**
**REV. 1**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	DE53-1212	1	1	ELBOW EXT 90 DEG M/M 3/4" U.N 0-Ring x 3/4" JIC
2	DA4-0606	1	1	Nipple, 3/8" NPT x 3/8" NPT
3	D74-121717	1	1	TEE, 3/4" NPT x 1.1/16" JIC x 1.1/16" JIC
4	D71-060606	1	1	TEE FFF 3/8" NPT
5	D54-2121	1	1	ELBOW 45 DEG M/M 1 5/16" U.N 0-Ring x 1 5/16" JIC
6	D53-2121	1	1	Elbow 90, 1.5/16" UNO-Ring x 1.5/16" JIC M/M
7	D53-1212	1	1	Elbow 90, 3/4" UNO-Ring x 3/4" JIC M/M
8	D37-1616	1	1	Elbow 90, 1" NPT x 1" NPT M/F
9	D17-0812	1	1	Elbow 90, 1/2" NPT x 3/4" JIC M/M
10	D15-1617	1	1	Nipple, 1" NPT x 1.1/16" JIC
11	D15-0612	1	1	Nipple, 3/8" NPT x 3/4" JIC
12	A2U130-391170	1	1	Trans Mount, L/H Top
13	A2U130-391169	1	1	Trans Mount, R/H Top
14	A2U130-391121	1	1	Trans Mount, R/H
15	A2U130-391120	1	1	Trans Mount, L/H
16	244676	1	1	DIP STICK - TRANS
17	229917	1	1	DIP STICK TUBE - TRANS
18	D52-0909	2	1	Nipple, 9/16" UNO-Ring x 9/16" JIC
19	D50-0909	2	1	Adaptor Union 90, 9/16" JIC x 9/16" JIC M/F
20	A2U913-391141	2	1	<O>64 x 5 Thk NOEPRENE
21	A2U130-391168	2	1	Btm Trans Mount
22	A2U130-391146	2	1	<O>65 BAR x 30 LG.
23	445402954	2	1	Bolt Hex Head, M16 x 150mm Long
24	445402951	2	1	Bolt Hex Head, M16 x 120mm Long
25	D53-0909	4	1	Elbow 90, 9/16" UNO-Ring x 9/16" JIC M/M
26	A2U130-348004	4	1	RESILIENT BLOCK
27	455669040	4	1	Hex Nyloc Nut, M16 X 2
28	W12HB	8	1	Washer, Flat, 3/4"
29	T12VG32W	8	1	Bolt Hex Head, 3/4"-10 UNC x 2" Long
30	450061622	8	1	Washer, Flat, 16 mm
31	450081120	12	1	Washer, Spring, 8 mm
32	445502759	12	1	Bolt Hex Head, M8 x 20mm Long

**MODULATOR VALVE ASSEMBLY**

03-02-20-11

**REV.****ASSEMBLY-MODULATED VALVE**

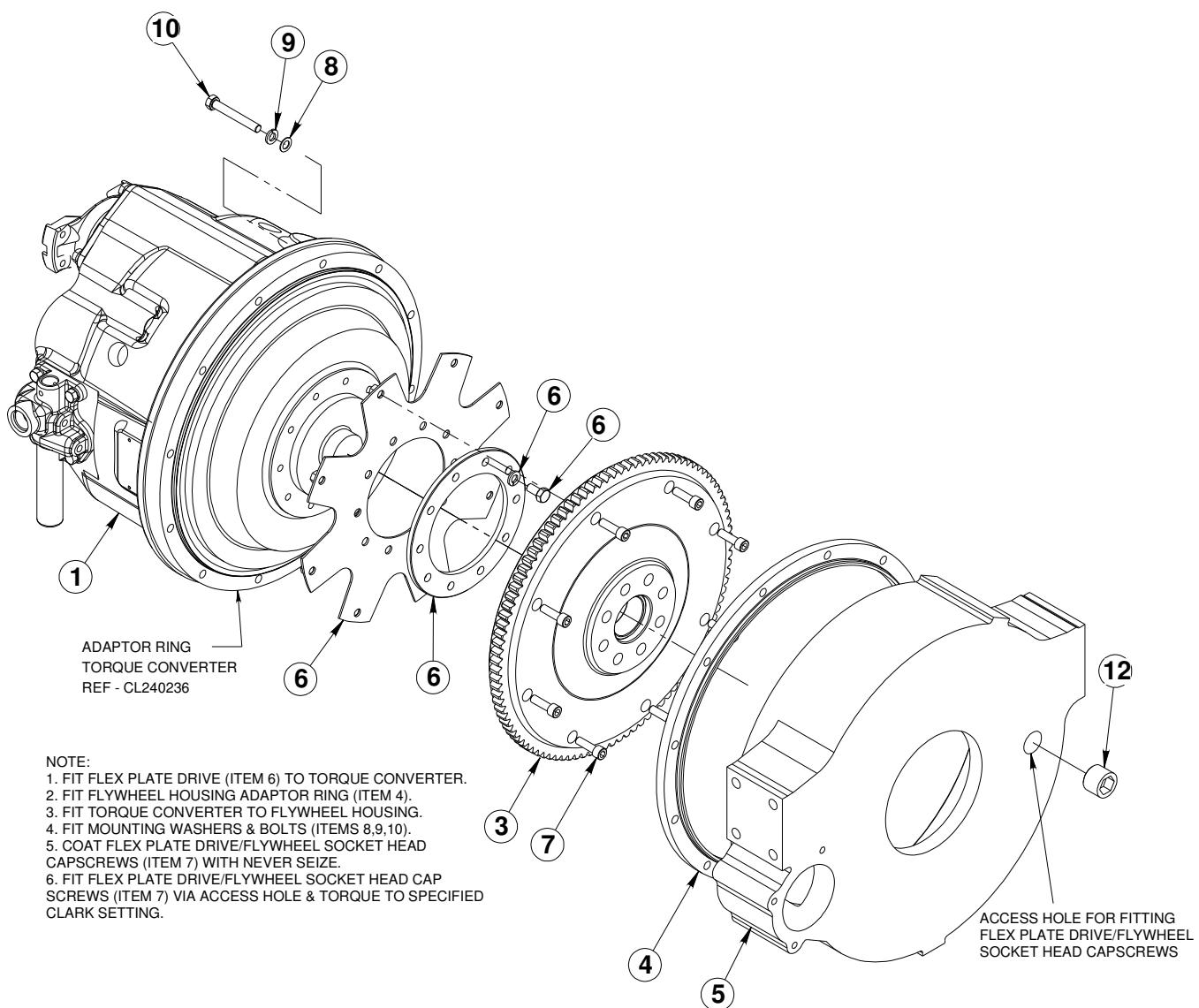
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-02-20-11

Sandvik Underground Mining Flameproof Equipment

**MODULATOR VALVE ASSEMBLY****03-02-20-11****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	67411984		1	Modulator Valve Assembly
1	04698008		4	Plug & Seal - Inc Item 2
2	64401556		4	Oring
3	04694051		2	Outer Accumulator Spring
4	04694076		2	Inner Accumulator Spring
5			2	Accumulator Spool - Part Of Assy
6			1	Modulator Valve Housing - Part Of Assy
7			2	Regulator Spool Assy - Part Of Assy
8	04698007		2	Regulator Spring
9	56039303		1	Modulated Valve To Housing Gasket

**TORQUE CONVERTOR & MOUNTING  
GROUP**
**03-04**
**A2U220-310027**
**REV. 2**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 03-04**
**Sandvik Underground Mining Flameproof Equipment**

**TORQUE CONVERTOR & MOUNTING  
GROUP**

03-04

**A2U220-310027****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-311041	03-04-01	1	C323.3-2 TORQUE CONVERTOR
3	A2U220-212009		1	FLYWHEEL MODIFICATION
4	A2U220-212010		1	SPACER MODIFICATION
5	C2A9Y4583		1	FLYWHEEL HOUSING
6	CL266902			FLEX PLATE GROUP (REFERENCE)
7	CLT6ZH20		8	SOCKET HEAD CAPSCREW
8	W6GA		12	WASHER, FLAT
9	W6GF		12	WASHER, SPRING
10	T6GG60		12	BOLT, HEX HD
12	CL40K-02		1	PLUG

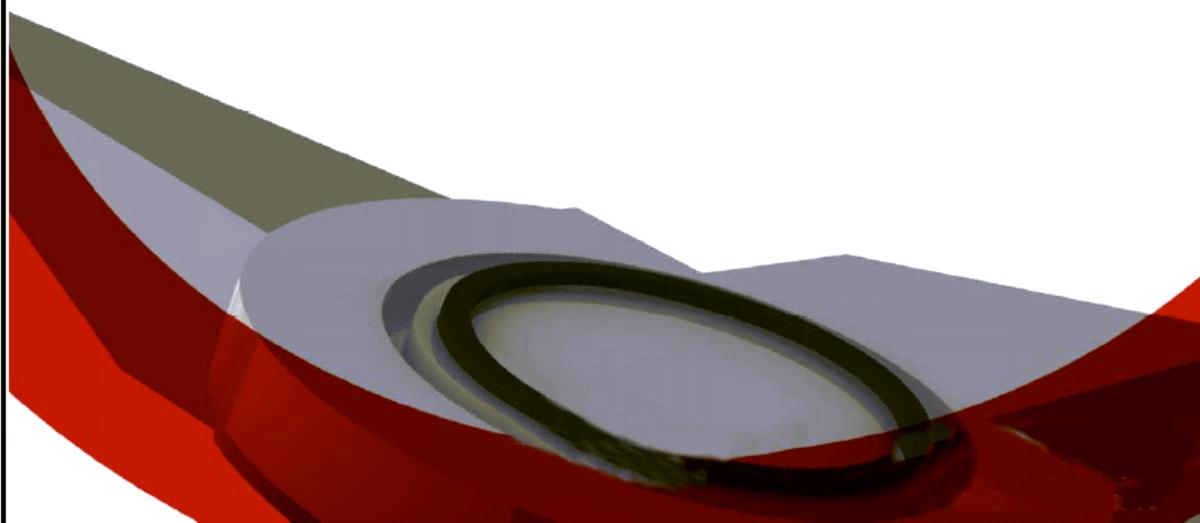
**A2U900-311041**  
**REV. 1**

**TORQUE CONVERTOR C323.3-29  
OFFSET**

**03-04-01**

**SERVICE PARTS LIST**

**MODEL: C323.3-2  
PART No: A2U900-311041**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    03-04-01**

**Sandvik Underground Mining Flameproof Equipment**

**TORQUE CONVERTOR C323.3-29  
OFFSET**

03-04-01

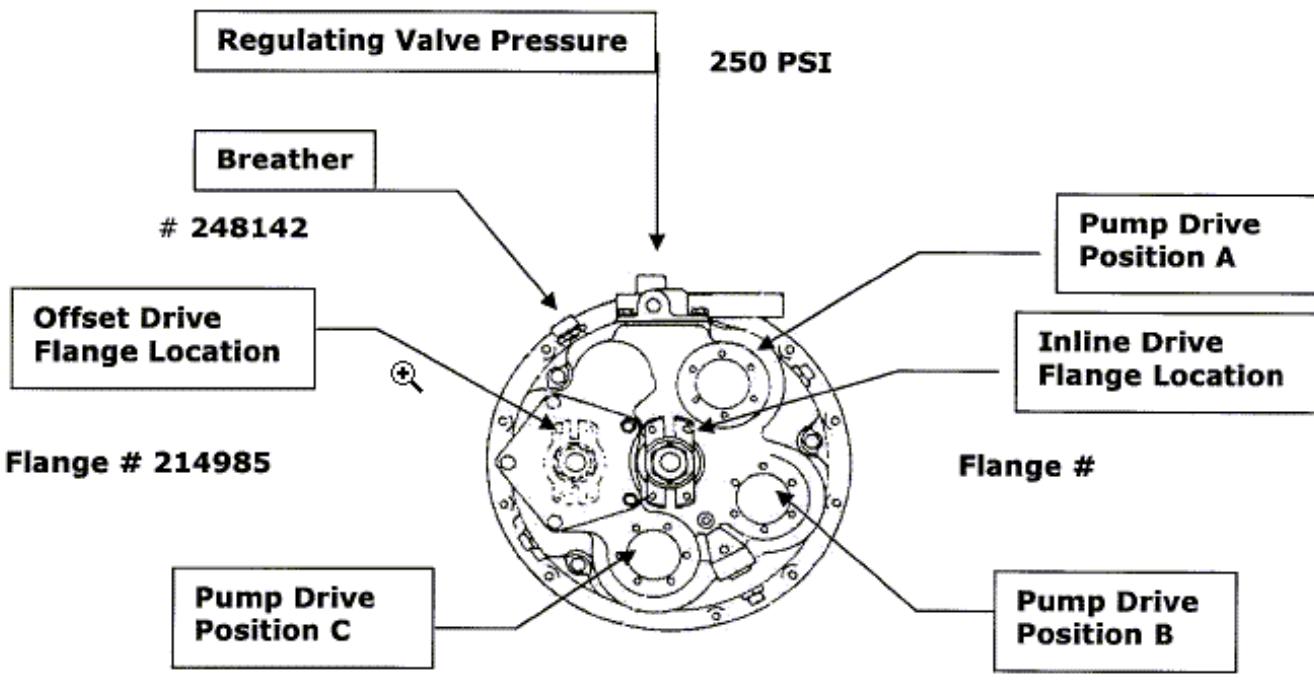
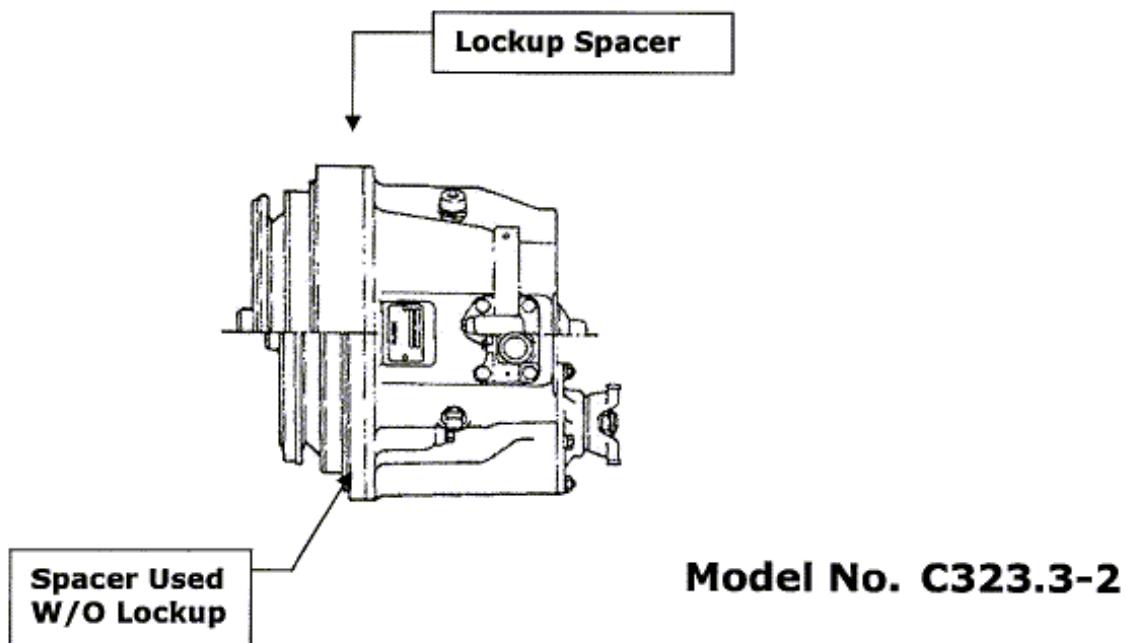
**A2U900-311041****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
				CONVERTER COVER SHEET
				PRESSURE REGULATING VALVE GRP.
				CONVERTOR HOUSING & OIL BAFFLE GRP.
				WHEEL GRP. FOR FLEX PLATE DRIVE
				DRIVE PLATE GRP.
				STATOR SUPPORT GROUP
				OUTPUT SHAFT & TURBINE SHAFT GROUP
				CHARGING PUMP GROUP
				PUMP DRIVE GROUP
				PUMP ADAPTOR GROUP
				PUMP COVER GRP.
				DRIVE PLATE GRP.

**CONVERTER COVER SHEET**

03-04-01-01

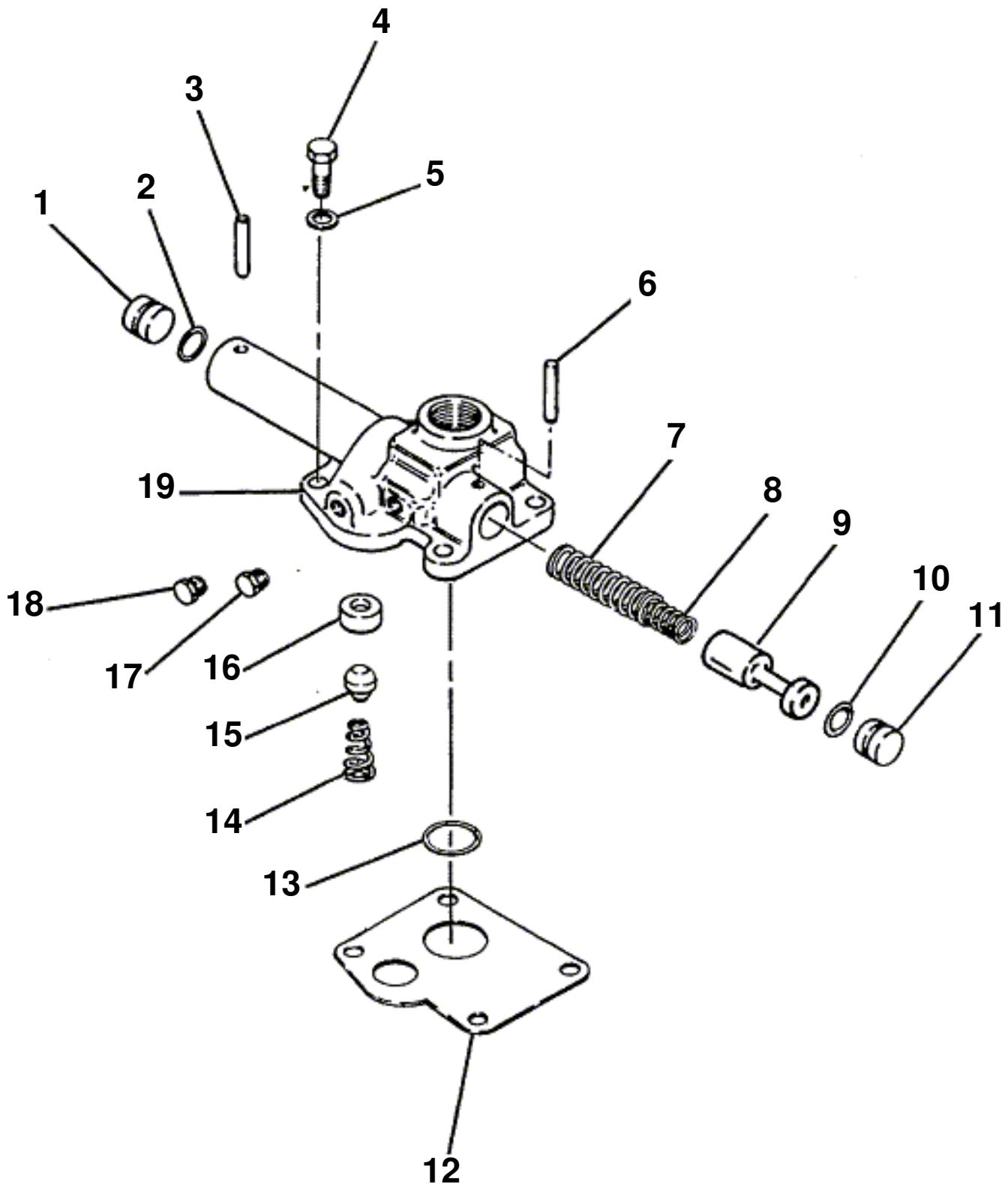
REV.

**CONVERTER COVER SHEET****Charging Pump G.P.M. 21/18 "C" Pos**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

C320-2  
REV.**PRESSURE REGULATING VALVE  
GROUP**

03-04-01-02



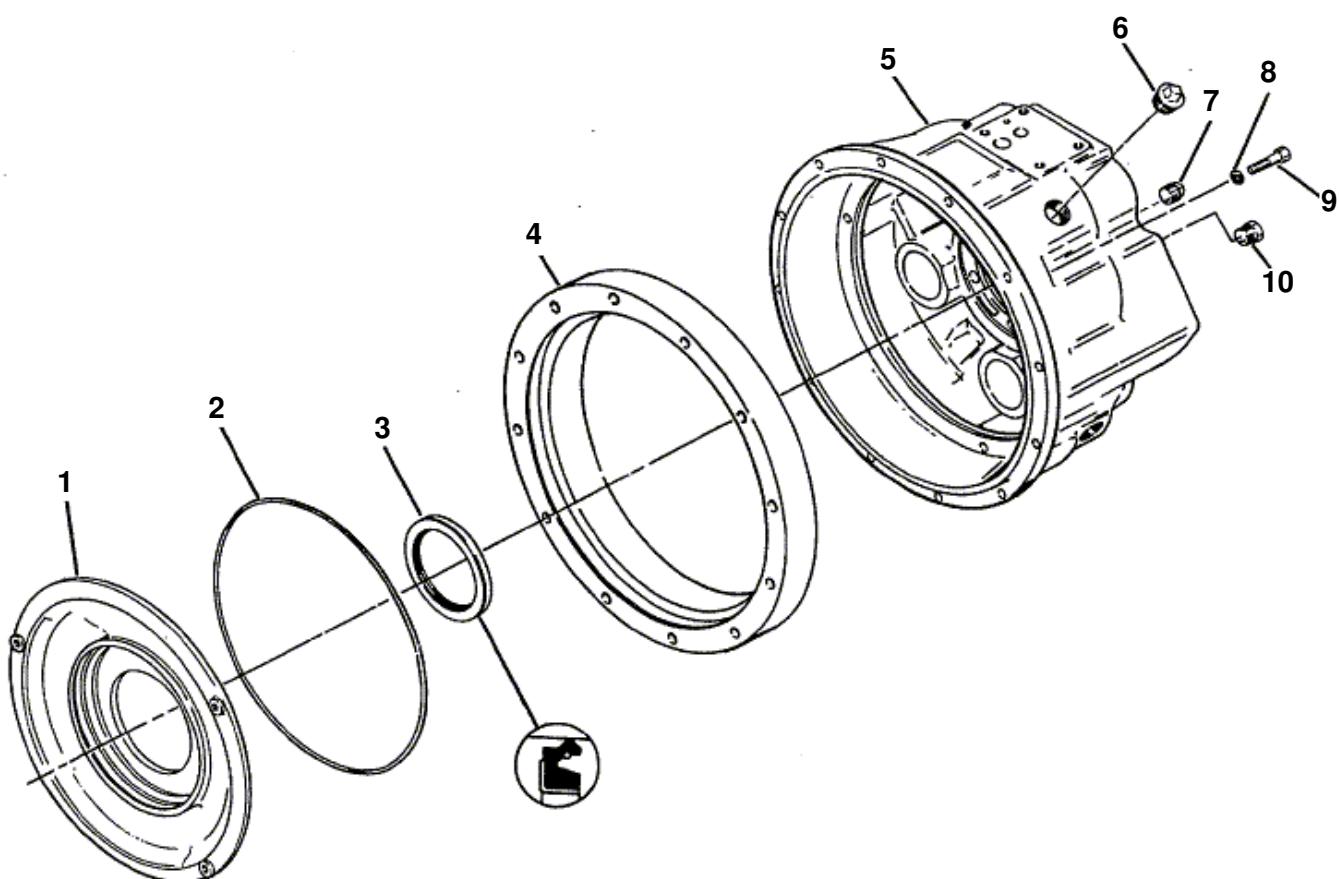
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-04-01-02

Sandvik Underground Mining Flameproof Equipment

**PRESSURE REGULATING VALVE  
GROUP****03-04-01-02****C320-2****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1				NOT USED ON THIS MODEL
2				NOT USED ON THIS MODEL
3				NOT USED ON THIS MODEL
4	04700577		4	REGULATOR VALVE TO HSG SCREW & LOCKWASHER
5				SEE ITEM 4
6	04699105		1	VALVE STOP ROLL PIN
7	04700862		1	VALVE SPRING - OUTER
8	04700861		1	VALVE SPRING - INNER
9	04699104		1	VALVE PISTON
10	04699377		1	VALVE STOP O_RING
11	04699296		1	VALVE STOP
12	04700857		1	REGULATOR VALVE TO HSG GASKET
13	64800199		1	REGULATING VALVE TO HSG O_RING
14	04700859		1	SAFETY VALVE SPRING
15	04699108		1	SAFETY VALVE PLUNGER
16	04699107		1	SAFETY VALVE SEAT
17	04699244		1	VALVE HSG PIPE PLUG
18	04699244		1	VALVE HSG PIPE PLUG
19	68004066		1	Regulator Valve Assy - Incl Items 6 thru 11

**C320-3  
REV.****CONVERTER HOUSING & OIL  
BAFFLE GRP.****03-04-01-03**

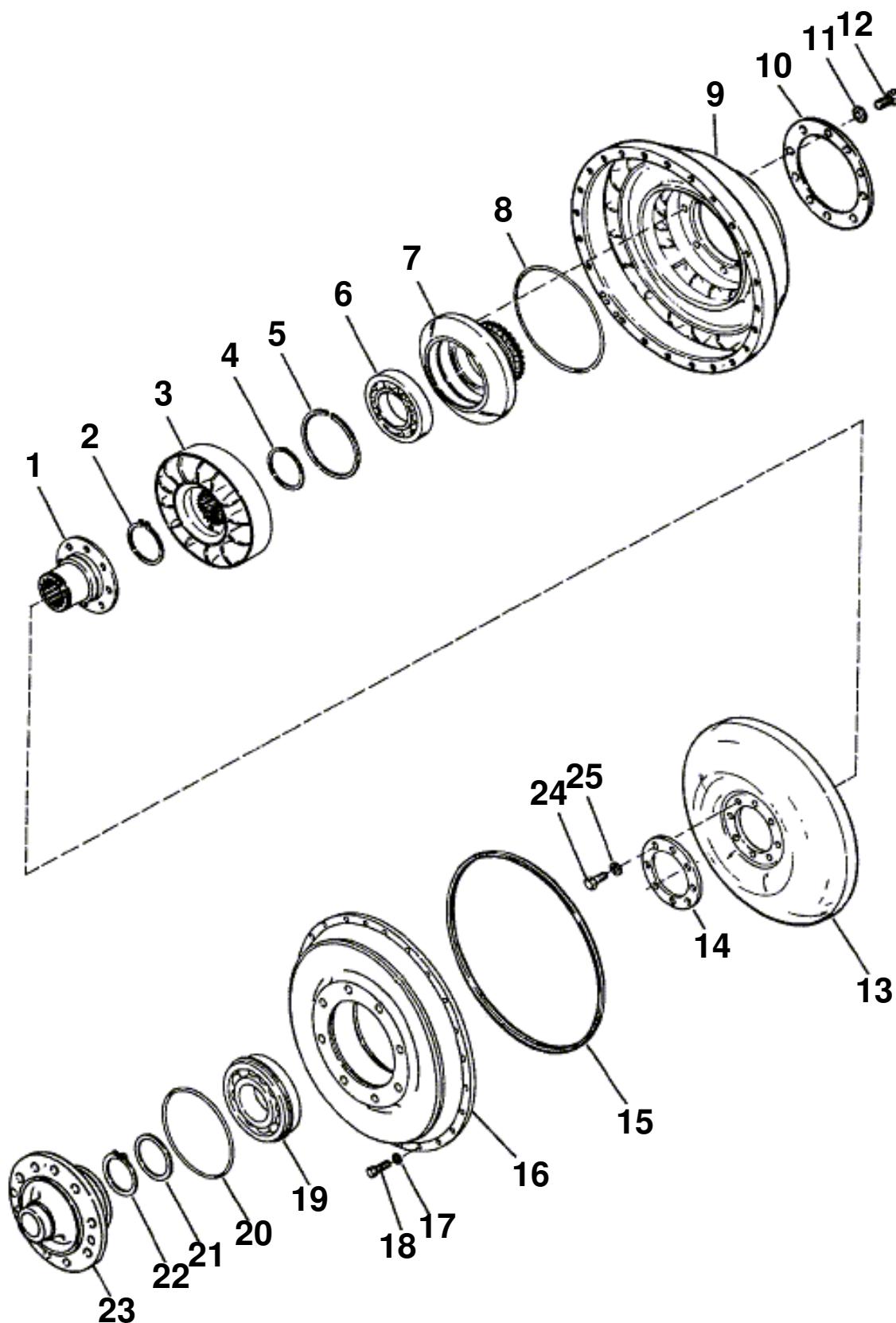
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    03-04-01-03**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****CONVERTER HOUSING & OIL  
BAFFLE GRP.****03-04-01-03****C320-3****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04699484		1	Oil Baffle - Includes Item 3
2	04697280		1	Oil Baffle O_Ring
3	04699394		1	Oil Baffle Oil Seal
4	04696509		1	Adapter Ring
5	55013336		1	Convertor Housing
6	04700828		4	Convertor Housing Pipe Plug
7	04699292		1	Convertor Housing Pipe Plug
8	64404377		3	Oil Baffle Screw Lockwasher
9	04699448		3	Oil Baffle Screw
10	04699244		1	Convertor Housing Pipe Plug
11	04699553		1	Center Output Hole Plug Ni
12	04696737		2	Speed Sensor Plug Ni
13	04696422		2	Speed Sensor Bushing Ni
14	04694477		2	Speed Sensor Port O_Ring Ni

**C320-4  
REV.****WHEEL GRP. FOR FLEX PLATE  
DRIVE****03-04-01-04**

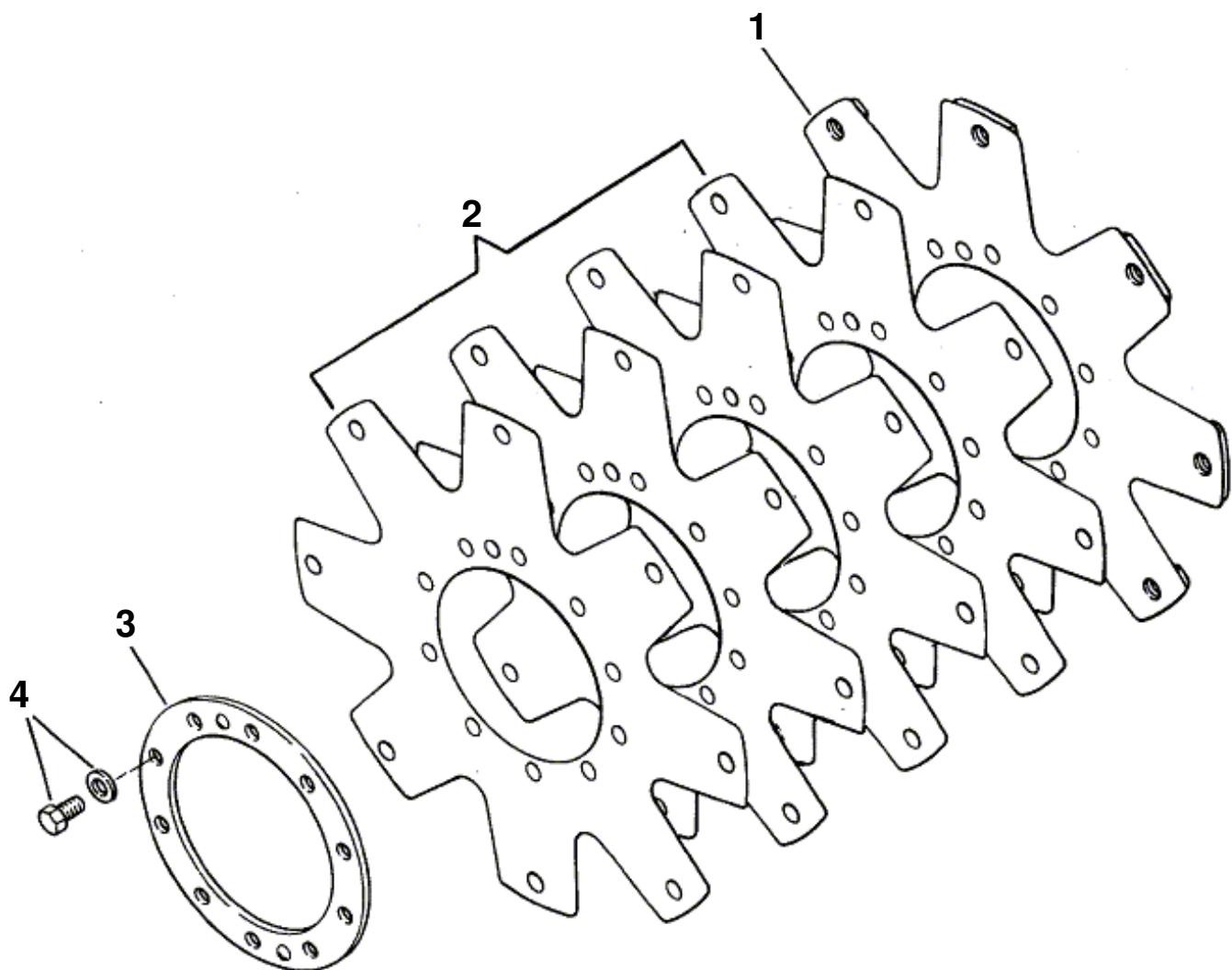
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION **03-04-01-04**

Sandvik Underground Mining Flameproof Equipment

**WHEEL GRP. FOR FLEX PLATE  
DRIVE****03-04-01-04****C320-4****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04695623	1	1	TURBINE HUB
2	04699120		1	REACTION MEMBER SNAP RING
3	56002374		1	REACTION MEMBER
4	04700670		1	REACTION MEMBER SPACER
5	04699363		1	BEARING SNAP RING
6	64400177		1	IMPELLER HUB BEARING
7	04698367		1	IMPELLER HUB
8	04698368		1	IMPELLER HUB O_RING
9	04693853		1	IMPELLER
10	04698370		1	IMPELLER HUB SCREW BACKING RING
11				NOT USED ON THIS MODEL
12	04698369	12		HUB TO IMPELLER SCREW
13	04698857		1	TURBINE
14	04695622		1	TURBINE HUB SCREW BACKING RING
15	04700699		1	IMPELLER TO COVER O_RING SEAL
16	55013162		1	IMPELLER COVER
17	64404377	24		IMPELLER TO COVER SCREW LOCKWASHER
18	04700983	24		IMPELLER TO COVER SCREW
19	04695600		1	IMPELLER COVER BEARING
20	04699480		1	BEARING CAP TO IMPELLER COVER O_RING
21	04691515		1	BEARING WASHER
22	04698623		1	BEARING SNAP RING
23	55015946		1	IMPELLER COVER BEARING CAP
24	69035095	8		TURBINE HUB SCREW
25				NOT USED ON THIS MODEL

**DRIVE PLATE GRP.****03-04-01-05****REV.**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    03-04-01-05**

Sandvik Underground Mining Flameproof Equipment



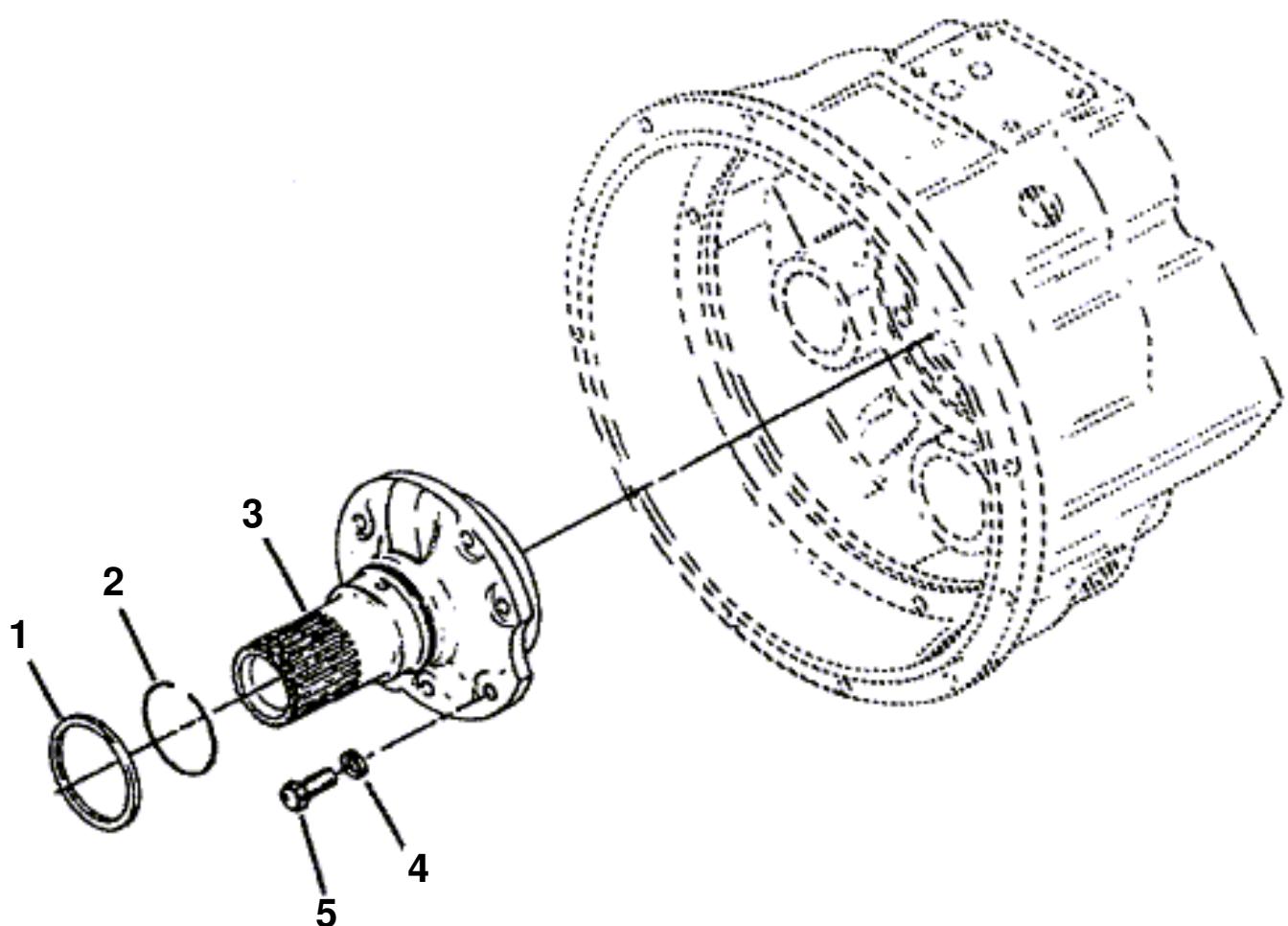
## PARTS MANUAL

### DRIVE PLATE GRP.

03-04-01-05

REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1				Drive Plate Assy
2				Drive Plate Assy
3	04699549		1	Drive Plate Backing Ring
4	04695137		10	Backing Plate Capscrew - Shipping Only
4A	64404377		10	Backing Plate Lockwasher - Ship Only

C320-6  
REV.**STATOR SUPPORT GROUP****03-04-01-06**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION    03-04-01-06

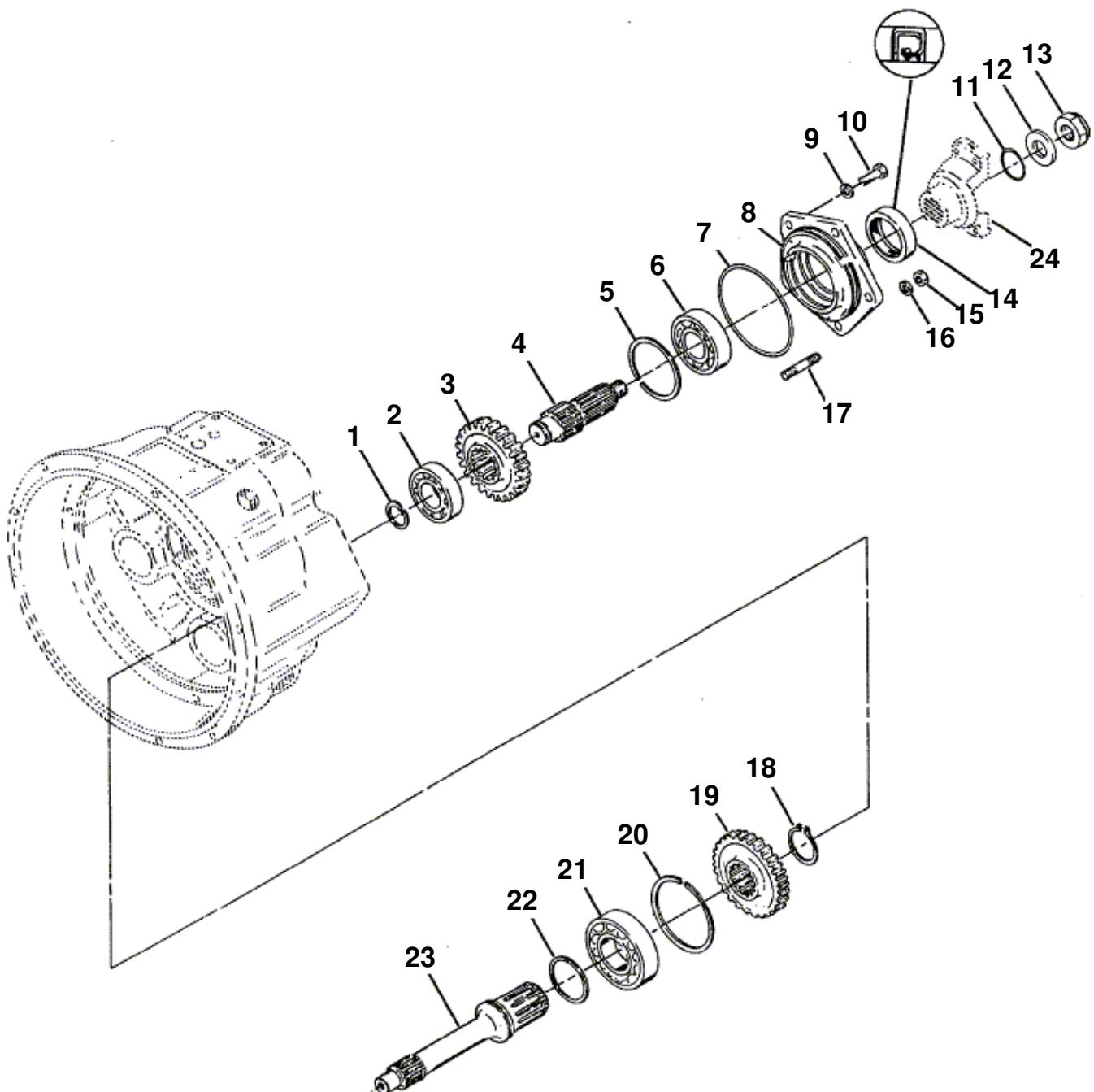
Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****C320-6****STATOR SUPPORT GROUP****03-04-01-06****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04696501		1	STATOR SUPPORT PISTON RING
2				NOT USED ON THIS MODEL
3	04699447		1	STATOR SUPPORT & SLEEVE ASSEMBLY
4	04697302		6	STATOR SUPPORT SCREW LOCKWASHER
5	04700507		6	STATOR SUPPORT SCREW

**TURBINE SHAFT & OUTPUT SHAFT  
GRP.**

03-04-01-07

**REV.**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-04-01-07

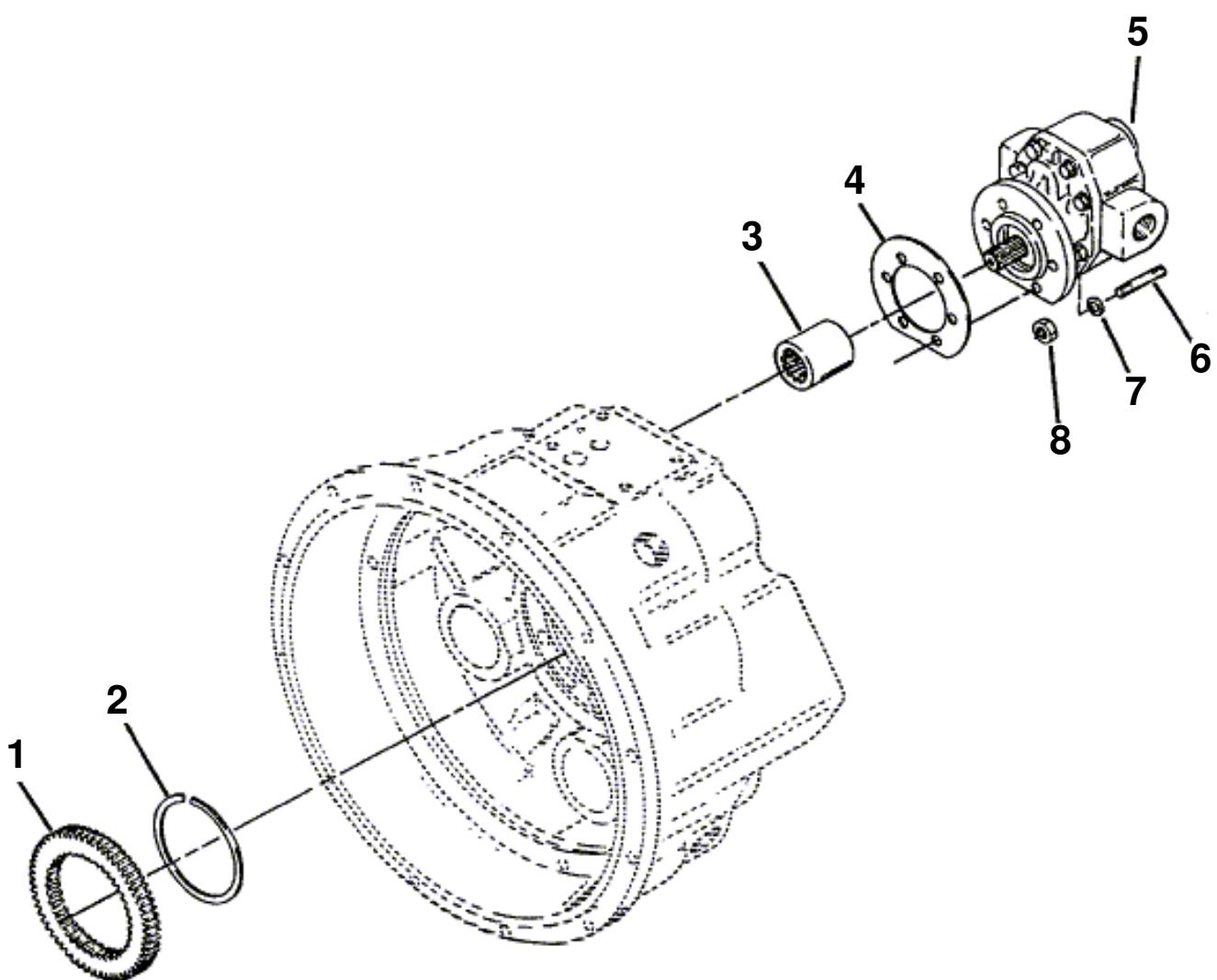
Sandvik Underground Mining Flameproof Equipment

**TURBINE SHAFT & OUTPUT SHAFT  
GRP.****03-04-01-07****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04700666		1	Bearing Snap Ring
2	04695683		1	Output Shaft Front Bearing
3	55017966		1	Output Shaft gear 26 T
4	04699114		1	Output Shaft
5	04700792		1	Output Shaft Bearing Snap Ring
6	04700692		1	Output Shaft Rear Bearing
7	04699480		1	Bearing Retainer "O" Ring
8	04695685		1	Bearing Retainer
9	04694262		3	Bearing Retainer Screw Lockwasher
10	04699014		3	Bearing Retainer Screw
11	04699479		1	Output Shaft "O" Ring
12	04699169		1	Output Shaft Washer
13	04699043		1	Output Shaft Nut
14	04700661		1	Bearing Retainer Oil Seal
15	04699433		2	Bearing Retainer Stud Nut
16	04694262		2	Bearing Retainer Oil Lockwasher
17	04699431		2	Bearing Retainer Stud
18	04700860		1	Gear Snap Ring
19	55017965		1	Turbine Shaft Gear 23T
20	04699117		1	Turbine Shaft Snap Ring
21	04699472		1	Turbine Shaft Bearing
22	04696673		1	Turbine Shaft Piston Ring
23	04695599		1	Turbine Shaft
24	0301624			Output Flange - See Front Sheet

C320-8  
REV.**CHARGING PUMP GROUP**

03-04-01-08



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-04-01-08

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****C320-8****CHARGING PUMP GROUP****03-04-01-08****REV.**

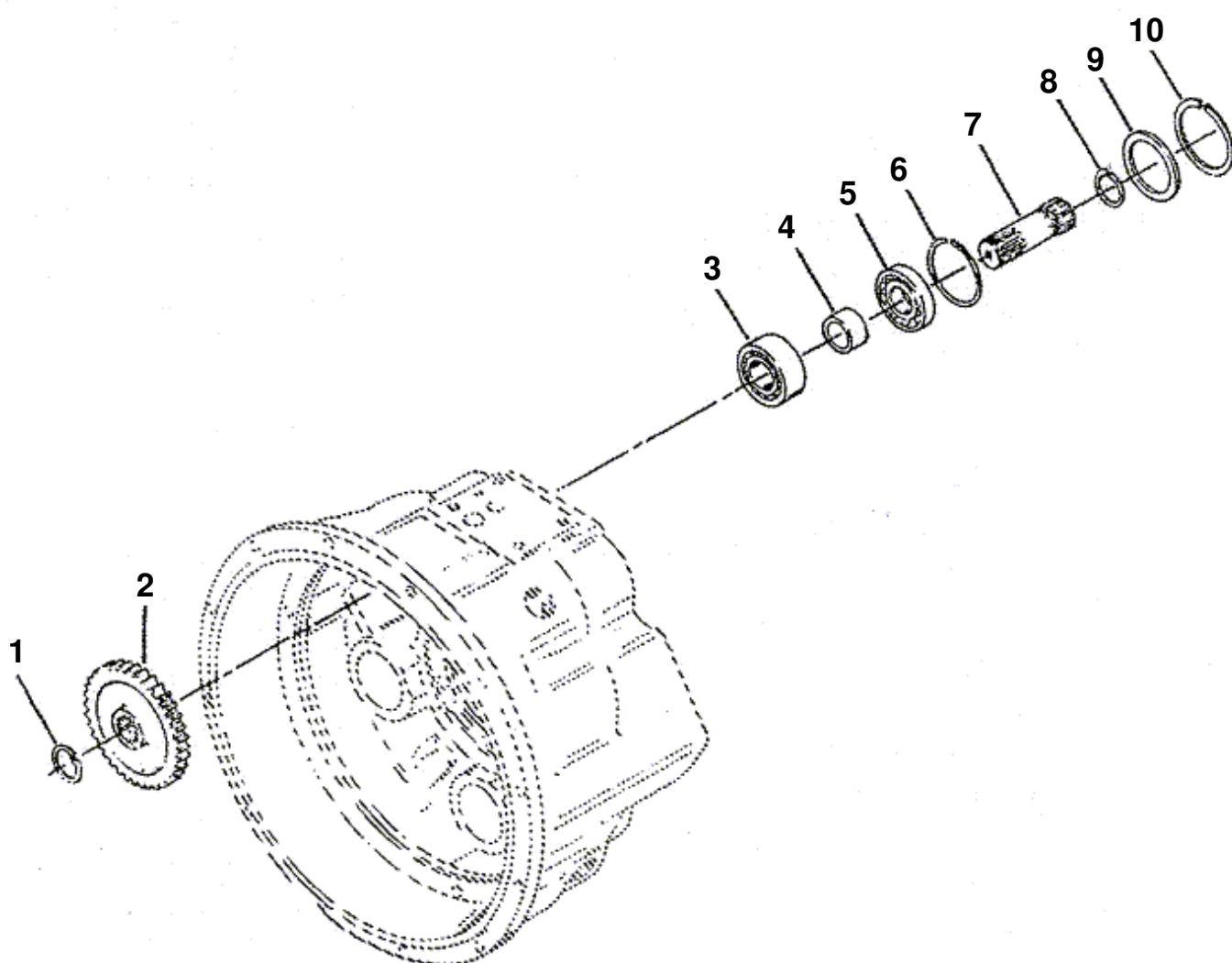
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04693660	1	1	IMPELLER HUB GROUP
2	04699000	1	1	IMPELLER HUB SNAP RING
3	04700203	1	1	CHARGING PUMP SLEEVE
4	64802577	1	1	CHARGING PUMP GASKET
5	3260952	1	1	CHARGING PUMP
6	04698051	3	1	PUMP MOUNTING STUD
7	64404377	3	1	PUMP STUD LOCKWASHER
8	04697172	3	1	PUMP STUD NUT

C320-9

**PUMP DRIVE GROUP**

03-04-01-09

REV.



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-04-01-09

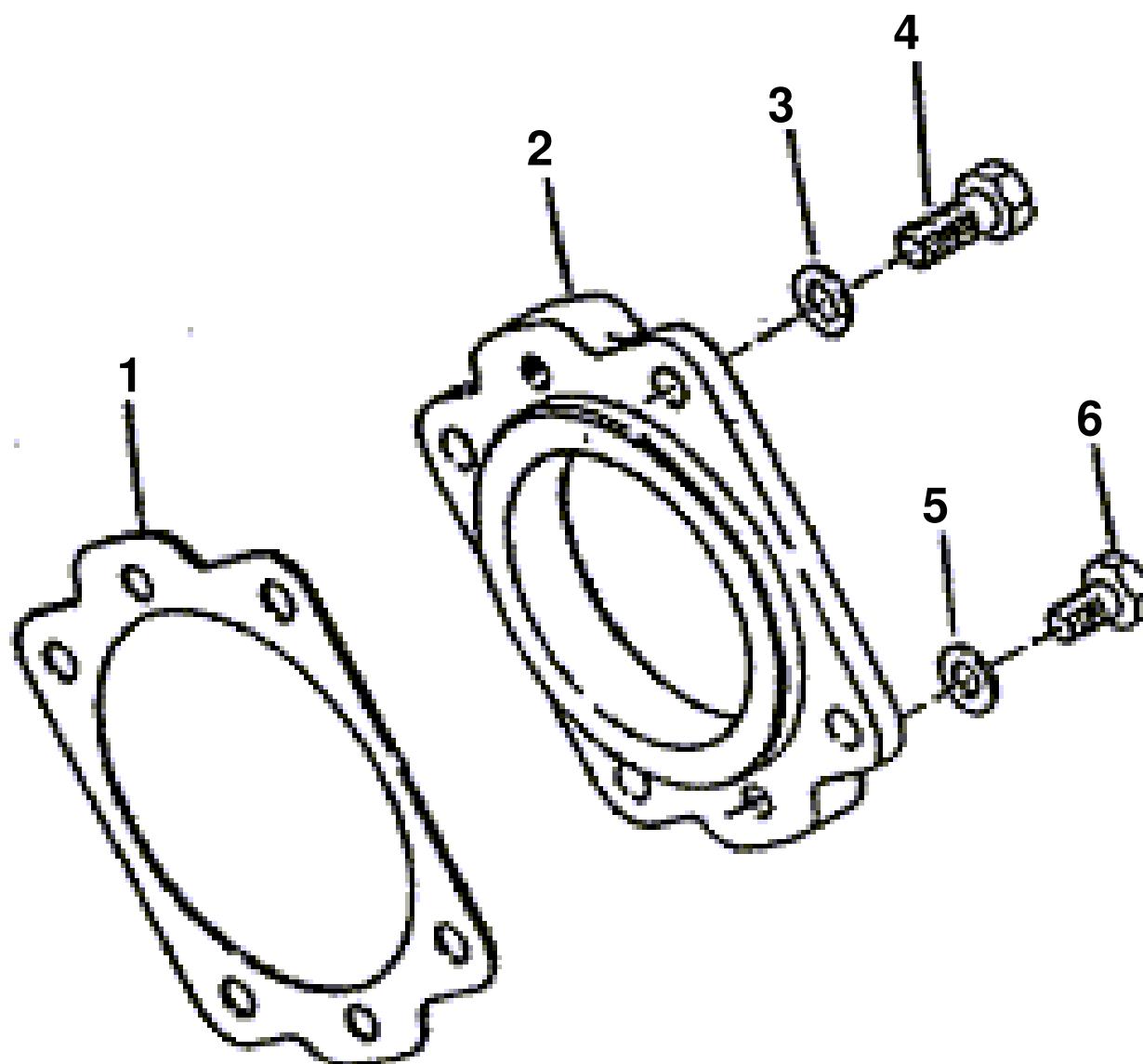
Sandvik Underground Mining Flameproof Equipment

**C320-9****PUMP DRIVE GROUP****03-04-01-09****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04700655	3	3	PUMP DRIVE GEAR SNAP RING
2	04693661	3	3	PUMP DRIVE GEAR
3	04693536	3	3	PUMP DRIVE SHAFT BEARING
4	04693282	3	3	PUMP DRIVE SHAFT SPACER
5	04700657	3	3	PUMP DRIVE SHAFT BEARING
6	04700658	3	3	Pump Drive Shaft Bearing Snap Ring
7	04699478	3	3	PUMP DRIVE SHAFT
8	04700574	3	3	PUMP DRIVE SNAP RING
9	04700659	3	3	PUMP DRIVE WASHER
10	04699111	3	3	PUMP DRIVE SNAP RING

C320-10  
REV.**PUMP ADAPTOR GROUP**

03-04-01-10



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-04-01-10

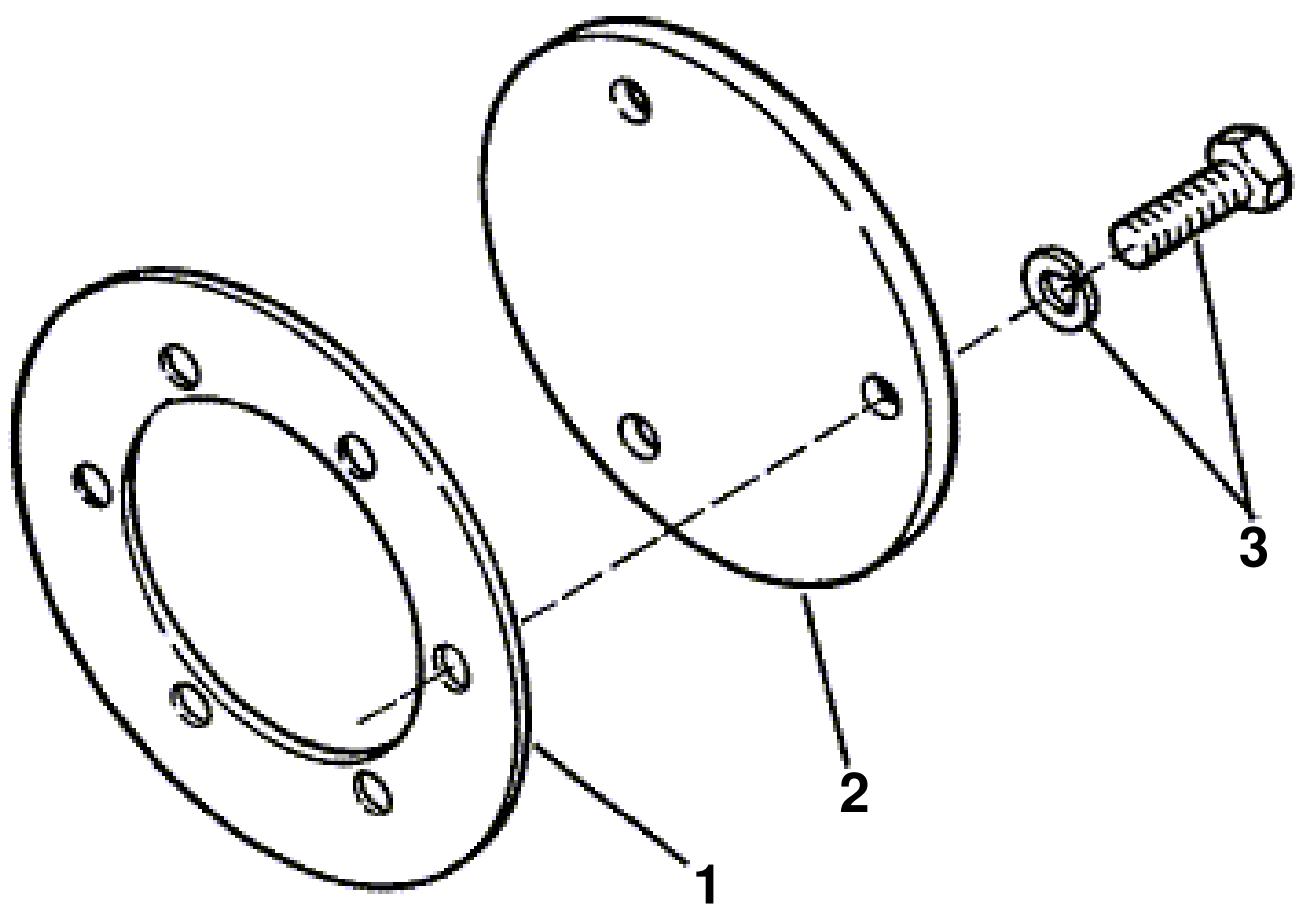
Sandvik Underground Mining Flameproof Equipment

**C320-10****PUMP ADAPTOR GROUP****03-04-01-10****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	64802577		1	Pump Adaptor Gasket
2	64114134		1	Pump Adaptor
2A	04696899		1	Plug - Pump Hole
3				Not Used on This Model
4	04699435		6	Pump Adaptor Screw
5				Pump Adaptor Screw or Stud Lockwasher - not supplied by Dana
6				Pump Adaptor Screw or Stud - not supplied by Dana
				NOTE: This Group Used at Pump Position "A"

**PUMP COVER GRP.**

03-04-01-11

**REV.**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    03-04-01-11**

Sandvik Underground Mining Flameproof Equipment



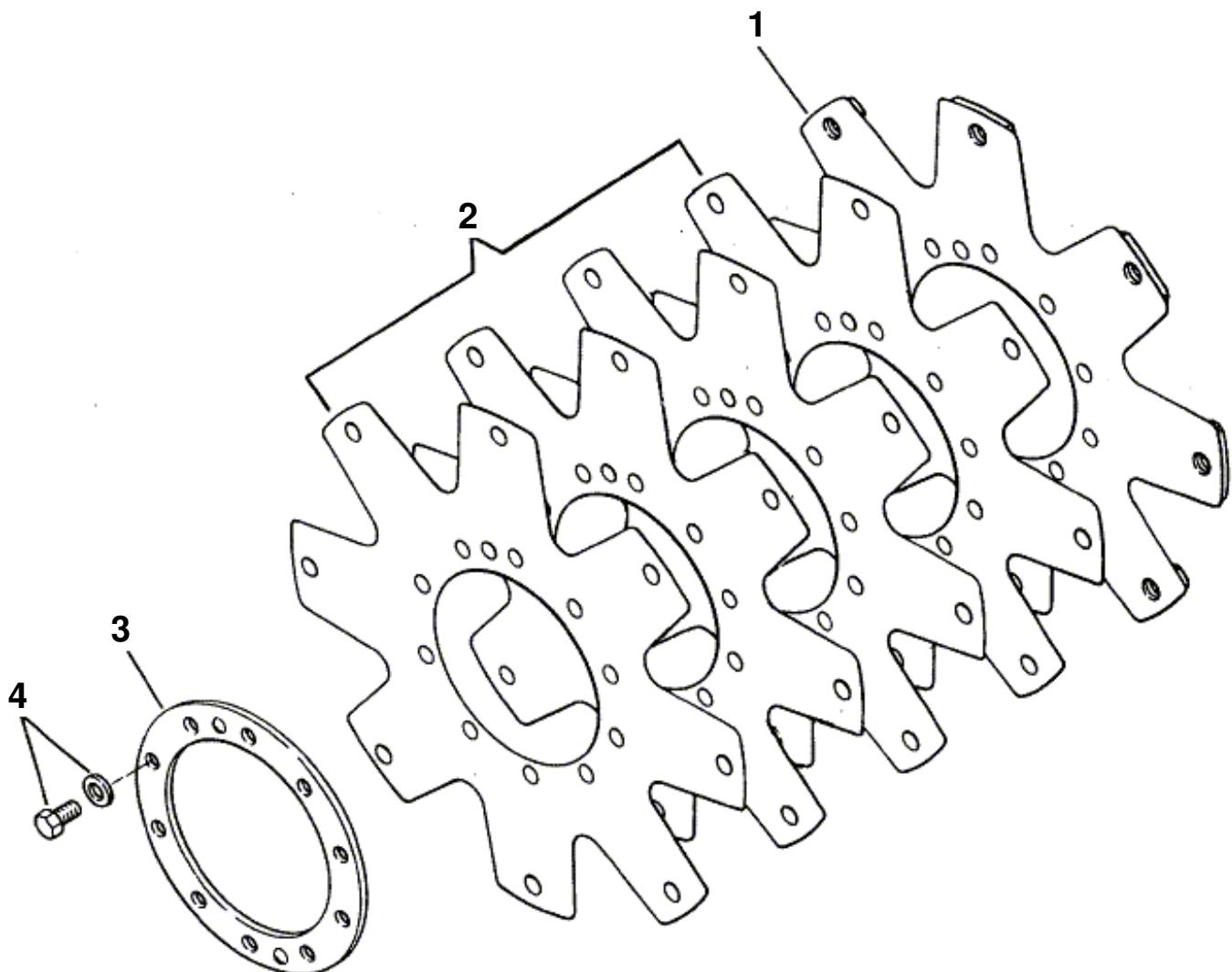
## PARTS MANUAL

### PUMP COVER GRP.

03-04-01-11

REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04700980		1	Pump Hole Cover Gasket
2	04699487		1	Pump Hole Cover
3	04700577		3	Pump hole Cover Screw & Lockwasher

C320-12  
REV.**DRIVE PLATE GROUP****03-04-01-12**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    03-04-01-12**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

C320-12

DRIVE PLATE GROUP

03-04-01-12

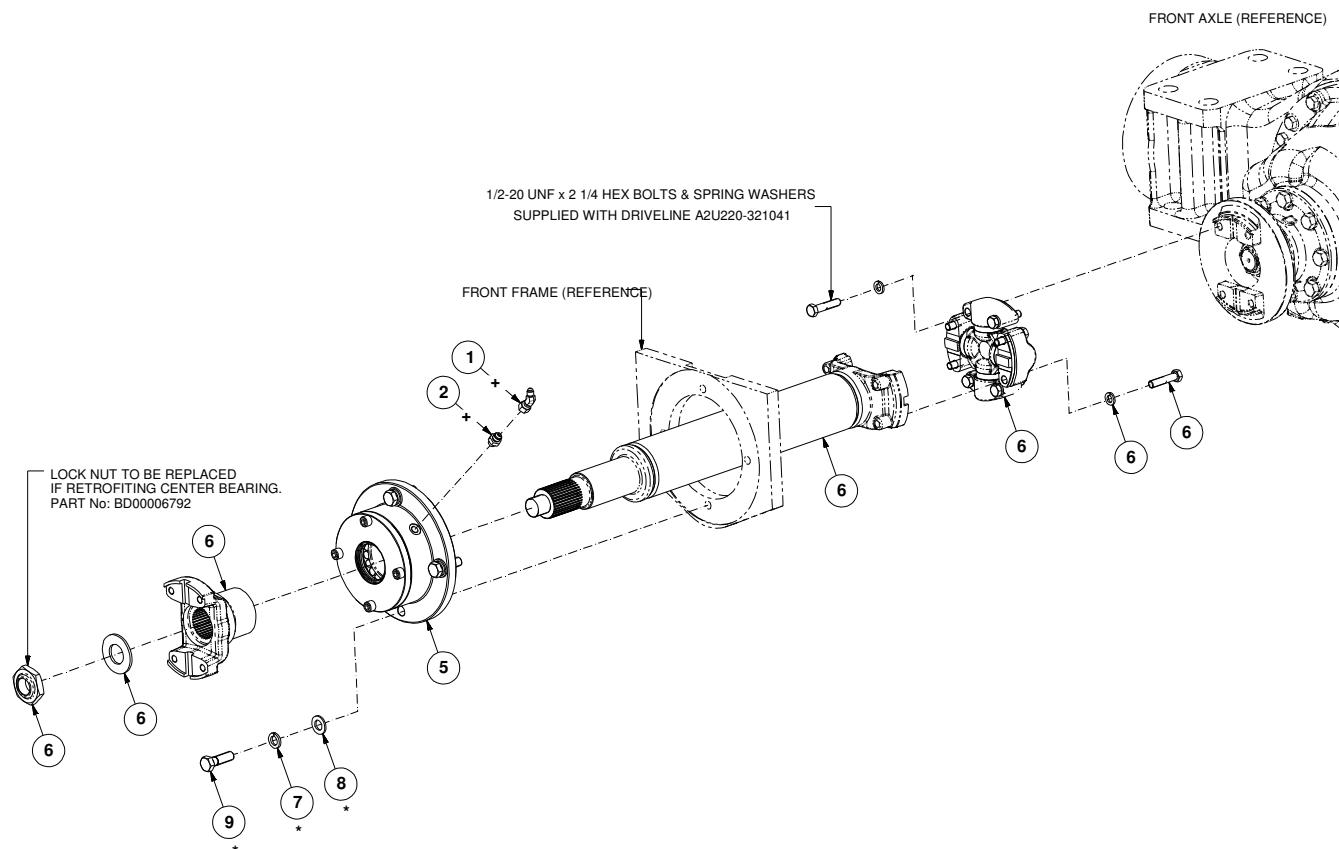
REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	04696616	1	1	Drive Plate Kit Assy 13.12" (incl Item 2 - 4A)
2	N.S.S.	4	1	Drive Plate Group - Inc in Item #1
3	04699549	1	1	Backing Ring
4	04700201	10	1	Backing Plate Lockwasher
4A	64403769	10	1	Drive Plate Mounting Screw

**A2U220-320029**  
**REV. 1**

**FRONT DRIVELINE GROUP LS190/  
LS191**

**03-05**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 03-05**

Sandvik Underground Mining Flameproof Equipment

**FRONT DRIVELINE GROUP LS190/  
LS191**

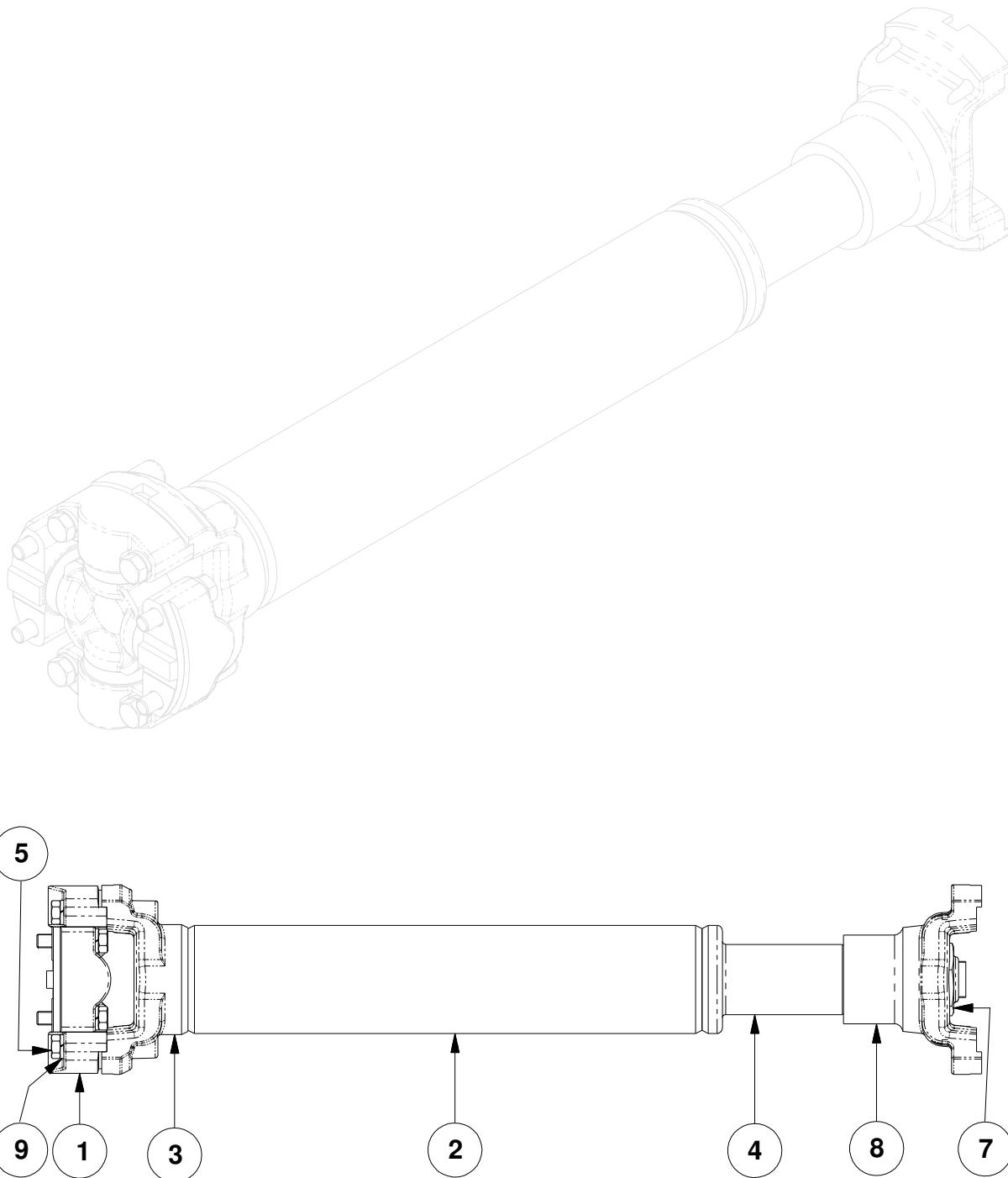
03-05

**A2U220-320029****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	D51-0707+		1	ADAPTOR UNION 45 DEG M/F 7/16 JIC x 7/16 JIC
2	D256-0409+		1	NIPPLE, 1/4" BSPP O-Ring x 9/16" JIC
+	BD00006829		1	Fitting Kit
*	BD00006828		1	Fastener Kit
5	A2U220-324006	03-05-02-01	1	BEARING HOUSING
6	A2U220-321041	03-05-02	1	DRIVE SHAFT FRONT
7	450081030*		4	Washer, Spring, 16 mm
8	450061622*		4	Washer, Flat, 16 mm
9	445502939*		4	Bolt Hex Head, M16 x 50mm Long

**A2U220-321041 DRIVELINE ASSEMBLY LS190/ LS191**  
**REV. 4**

**03-05-02**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 03-05-02**

**Sandvik Underground Mining Flameproof Equipment**

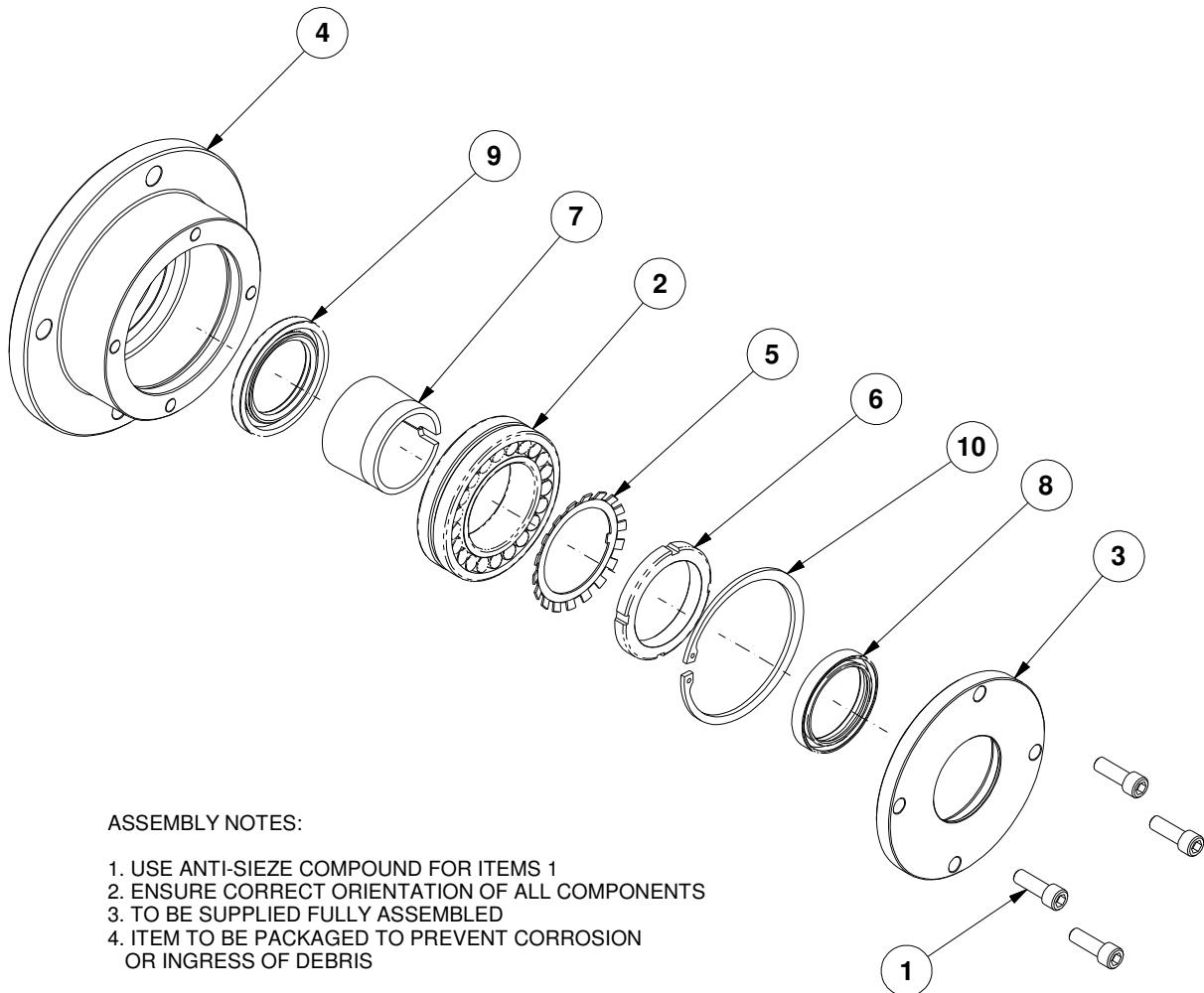


## PARTS MANUAL

A2U220-321041    DRIVELINE ASSEMBLY LS190/ LS191    03-05-02

REV. 4

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	114-8516LFL	1		8.5C Spider
2	321041_001	1		Tube 100 X 5
3	8.5C-28-1005	1		8.5C Welded Yoke
4	8.5C-53-850	1		8.5C Midship Stub
5	8.5C-BOLT	8		1/2-20 X 2 1/4 Hex Head Bolt
6	8.5C-WASHER	1		Plain Washer, 1 3/8 Dia, Narrow
7	BD00006792	1		LOCK NUT, 1 1/4-18 UNEF
8	BD00011619	1		8.5C Splined Slip Yoke
9	W8GF	8		Spring Washer, 1/2 Dia

**A2U220-324006****BEARING HOUSING****03-05-02-01****REV. 1****ASSEMBLY NOTES:**

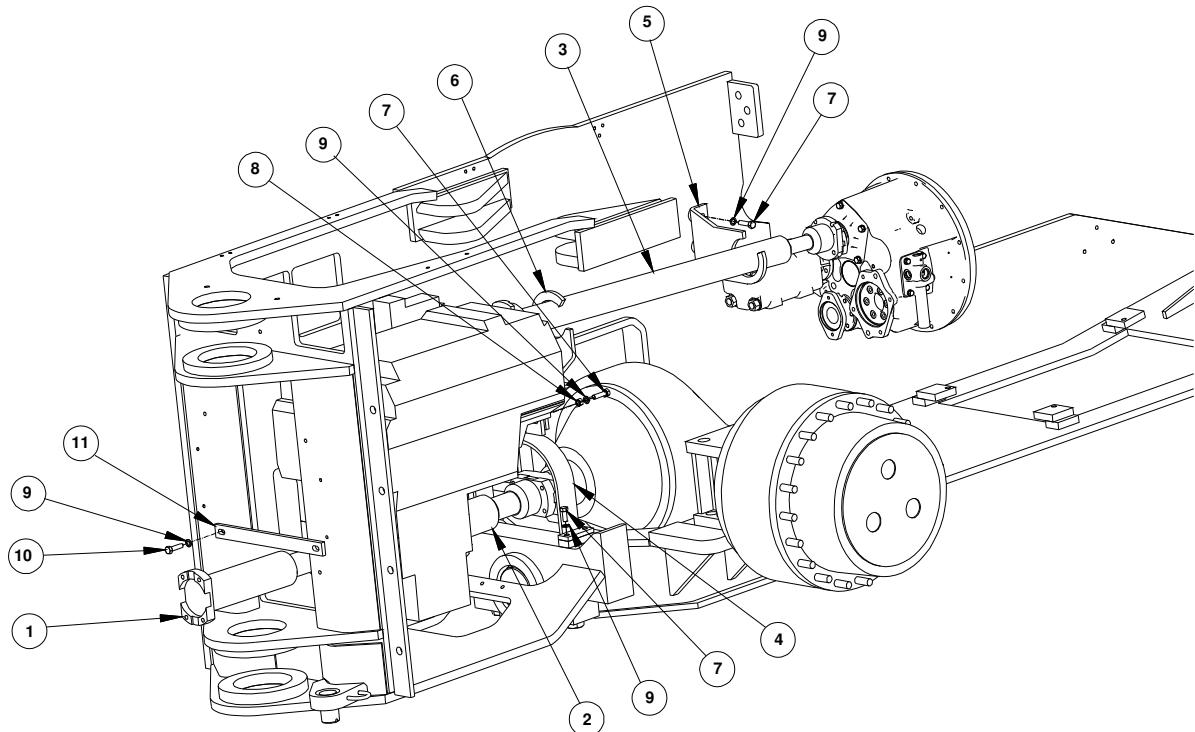
1. USE ANTI-SIEZE COMPOUND FOR ITEMS 1
2. ENSURE CORRECT ORIENTATION OF ALL COMPONENTS
3. TO BE SUPPLIED FULLY ASSEMBLED
4. ITEM TO BE PACKAGED TO PREVENT CORROSION  
OR INGRESS OF DEBRIS

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION    03-05-02-01**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U220-324006****BEARING HOUSING****03-05-02-01****REV. 1**

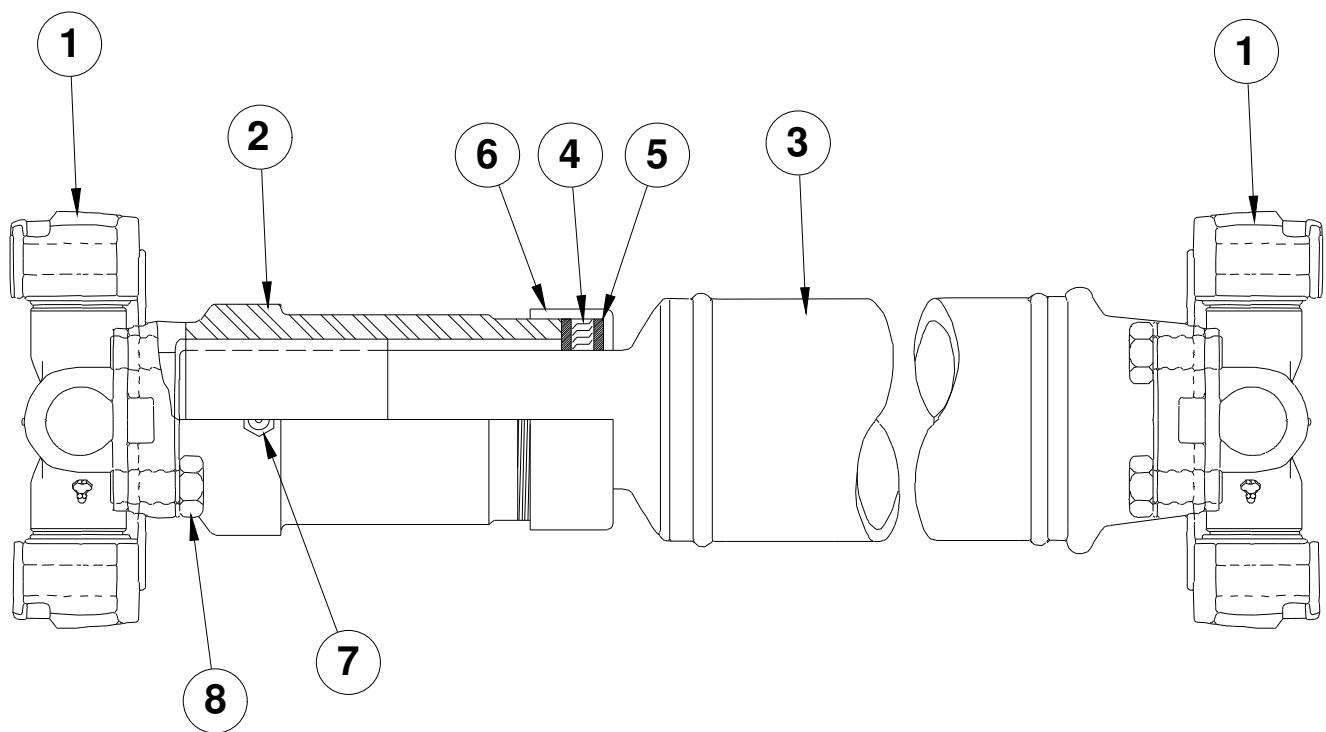
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445200845	4		Shcs M12 X 35Lg
2	A2U220-324010	1		Roller Bearing, Spherical
3	A2U220-324011	1		20 Plate X 175 X 175 Lg. (Shaped)
4	A2U220-324012	1		90 Plate X 250 X 250 (Shaped)
5	A2U220-324013	1		Lock Washer, M75
6	A2U220-324014	1		Lock Nut M75 X 2 - Vendor No. Km 15
7	A2U220-324015	1		Adaptor Sleeve Vendor No. H315
8	A2U220-324016	1		Seal,Shaft, Single Lip, 65 X 85 X 12, Viton
9	A2U220-324017	1		Seal, Shaft, Double Lip, 65 X 100 X 10, Nitrile
10	A2U900-394015	1		Internal Circlip, 119 Id

**A2U220-320030****REAR DRIVELINE GROUP****03-07****REV. 0****PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION 03-07**

Sandvik Underground Mining Flameproof Equipment

**A2U220-320030****REAR DRIVELINE GROUP****03-07****REV. 0**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	A2U220-321040	03-07-07	1	DRIVELINE TRANS. TO FLANGE BEARING
2	A2U220-321039	03-07-08	1	DRIVELINE TRANS. TO REAR AXLE
3	111097-1	03-07-03	1	DRIVELINE ENGINE TO TRANS.
4	A2U220-391158		1	GUARD DRIVELINE
5	A2U220-391159		1	GUARD DRIVELINE
6	A2U220-391160		1	GUARD DRIVELINE
7	A2U900-392027		8	CAPSCREW M12 x 30 LG
8			8	CAPSCREW
9	64404396		10	WASHER, SPRING M10
10	A2U900-392011		2	BOLT M12 x 45 LG
11	248872		1	GUARD, DRIVELINE

111097  
REV. 1**DRIVELINE ENGINE TO  
TRANSMISSION****03-07-03**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    03-07-03**

Sandvik Underground Mining Flameproof Equipment

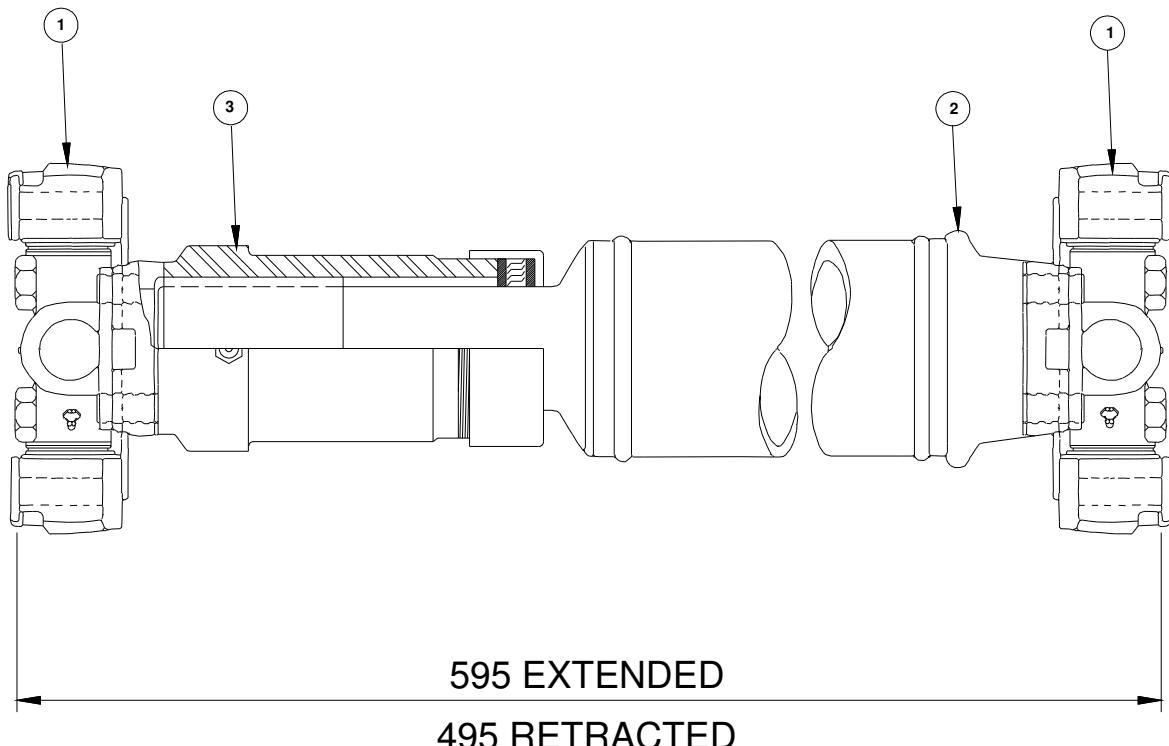
**PARTS MANUAL****111097****DRIVELINE ENGINE TO  
TRANSMISSION****03-07-03****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	016-15015	2	1	Spider Assembly
2	D6N66163	1	1	Slip Yoke
3	M2E42-24954-1	1	1	Tube Assembly
4	M2E16995J	1	1	Felt Seal
5	M2E16996J	2	1	Washer
6	M2E2-60724	1	1	Stuffing Cap
7	M2E8X157	1	1	Grease Fitting
8	102314	8	1	Capscrew

**A2U220-321040**  
**REV. 0**

**DRIVELINE ASSEMBLY HEAVY  
DUTY LHD**

**03-07-07**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 03-07-07**

**Sandvik Underground Mining Flameproof Equipment**

**PARTS MANUAL****DRIVELINE ASSEMBLY HEAVY  
DUTY LHD**

03-07-07

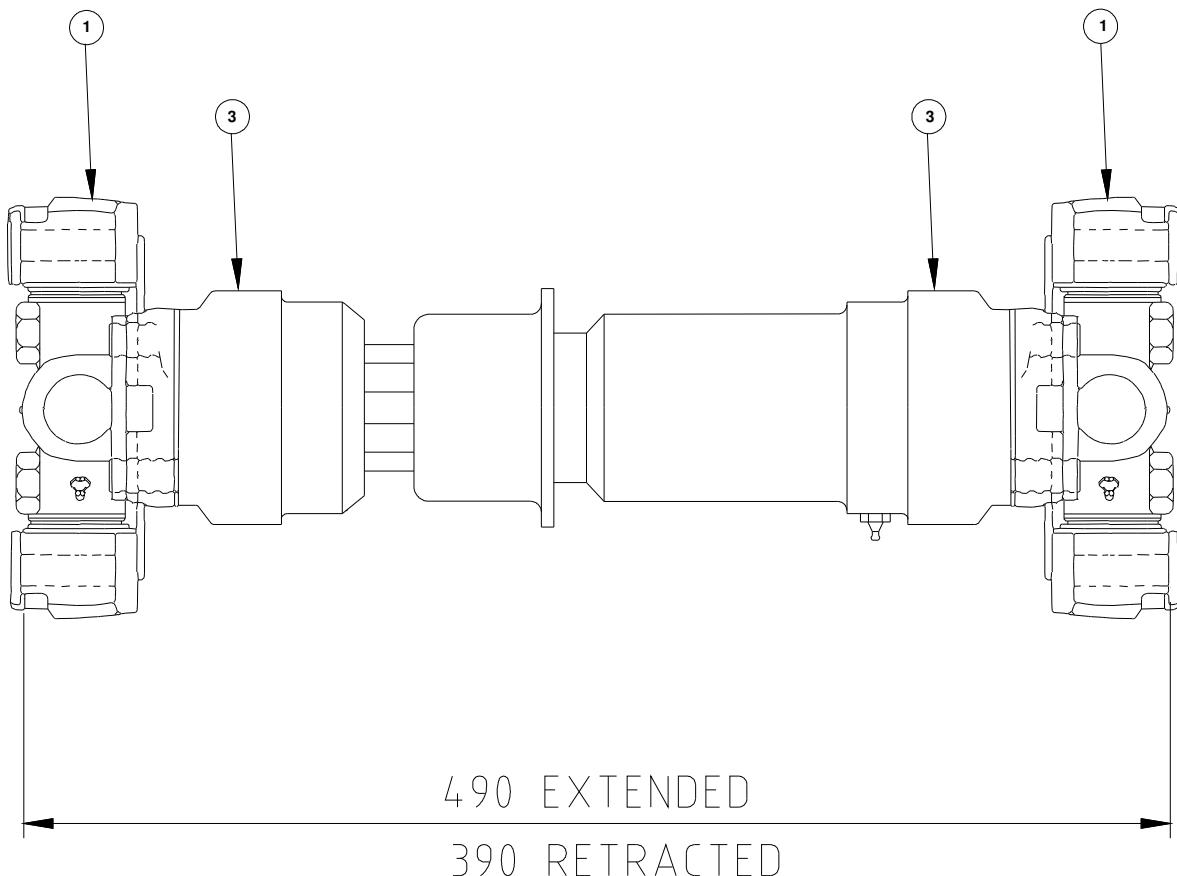
**A2U220-321040****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	114-8516-LFL	2	1	SPIDER ASSEMBLY, 8.5C
2	8.5C-28-851	1	1	WELD YOKE
3	8.5C.6.1005	1	1	YOKE/SHAFT & BARREL

**A2U220-321039**  
**REV. 0**

**DRIVELINE ASSEMBLY HEAVY  
DUTY LHD**

**03-07-08**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

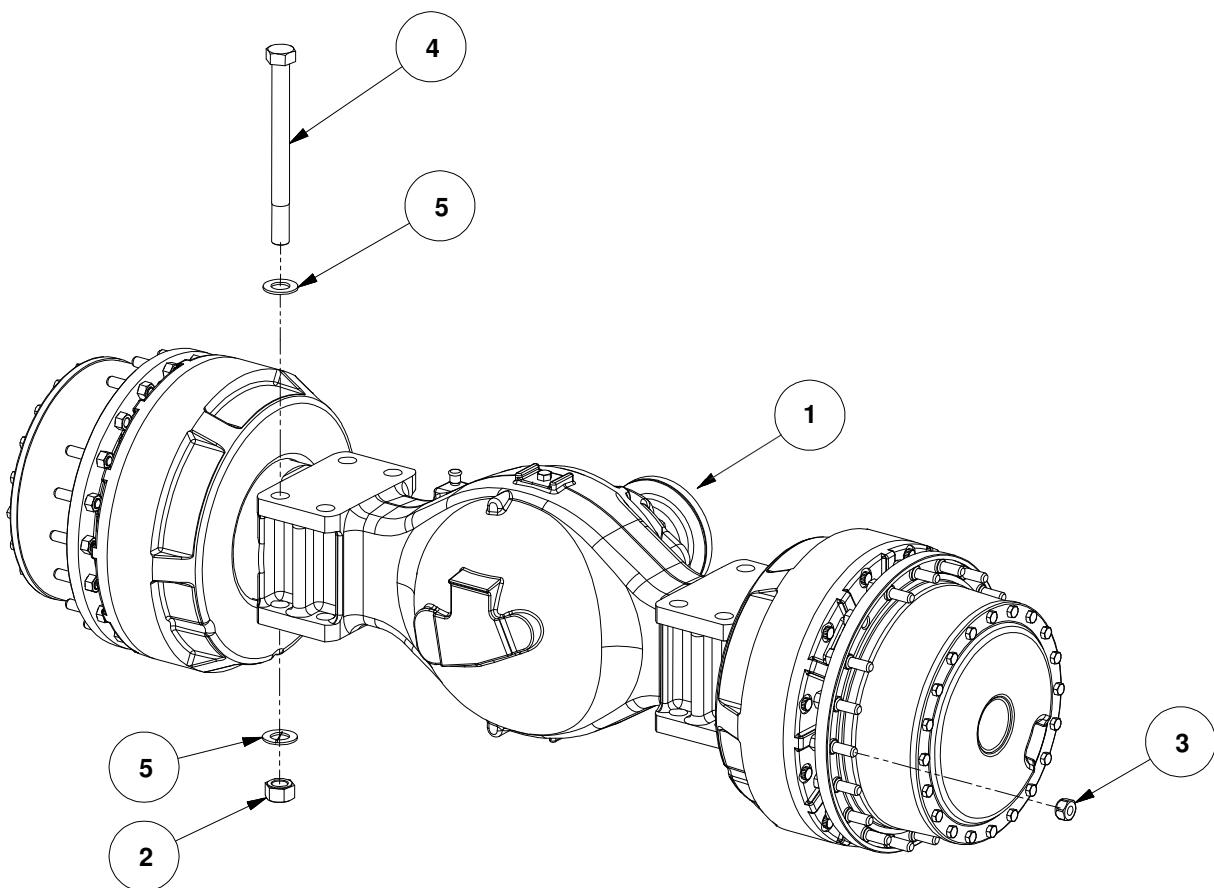
**SECTION    03-07-08**

**Sandvik Underground Mining Flameproof Equipment**

**PARTS MANUAL****DRIVELINE ASSEMBLY HEAVY  
DUTY LHD****03-07-08****A2U220-321039****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	144-8508			SPIDER ASSEMBLY, 8.5C
3	8.5C-3-851+6.42-300			YOKE/SHAFT BARREL

**A2U220-340060**  
**REV. 1**

**FRONT AXLE GROUP****03-08**

Front Axle Group

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 03-08**

Sandvik Underground Mining Flameproof Equipment

**A2U220-340060****FRONT AXLE GROUP****03-08****REV. 1**

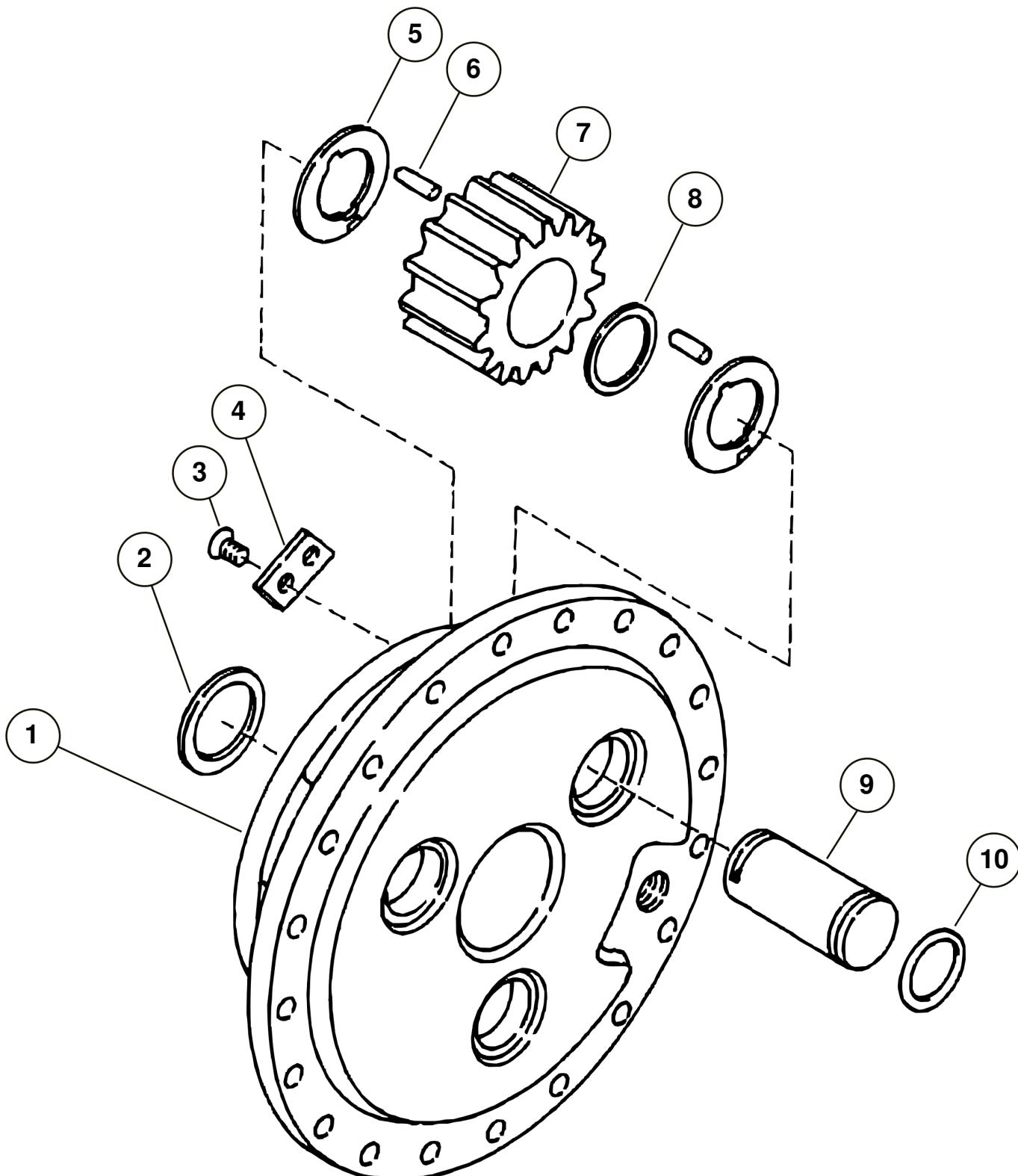
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-341031	03-08-05	1	AXLE, POSI STOP
2	T20GG		8	1 1/4-7 Hex Nut GR 8.8
3	64113616		36	WHEEL NUT, HEX.
4	A2U130-196132		8	BOLT, HEX HD
5	W20GA		16	Plain Washer, 1 1/4 Dia,Narrow

CL2109806

**PLANET CARRIER ASSEMBLY**

03-08-02-01

REV. 0



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-08-02-01

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

**CL2109806**

**PLANET CARRIER ASSEMBLY**

**03-08-02-01**

**REV. 0**

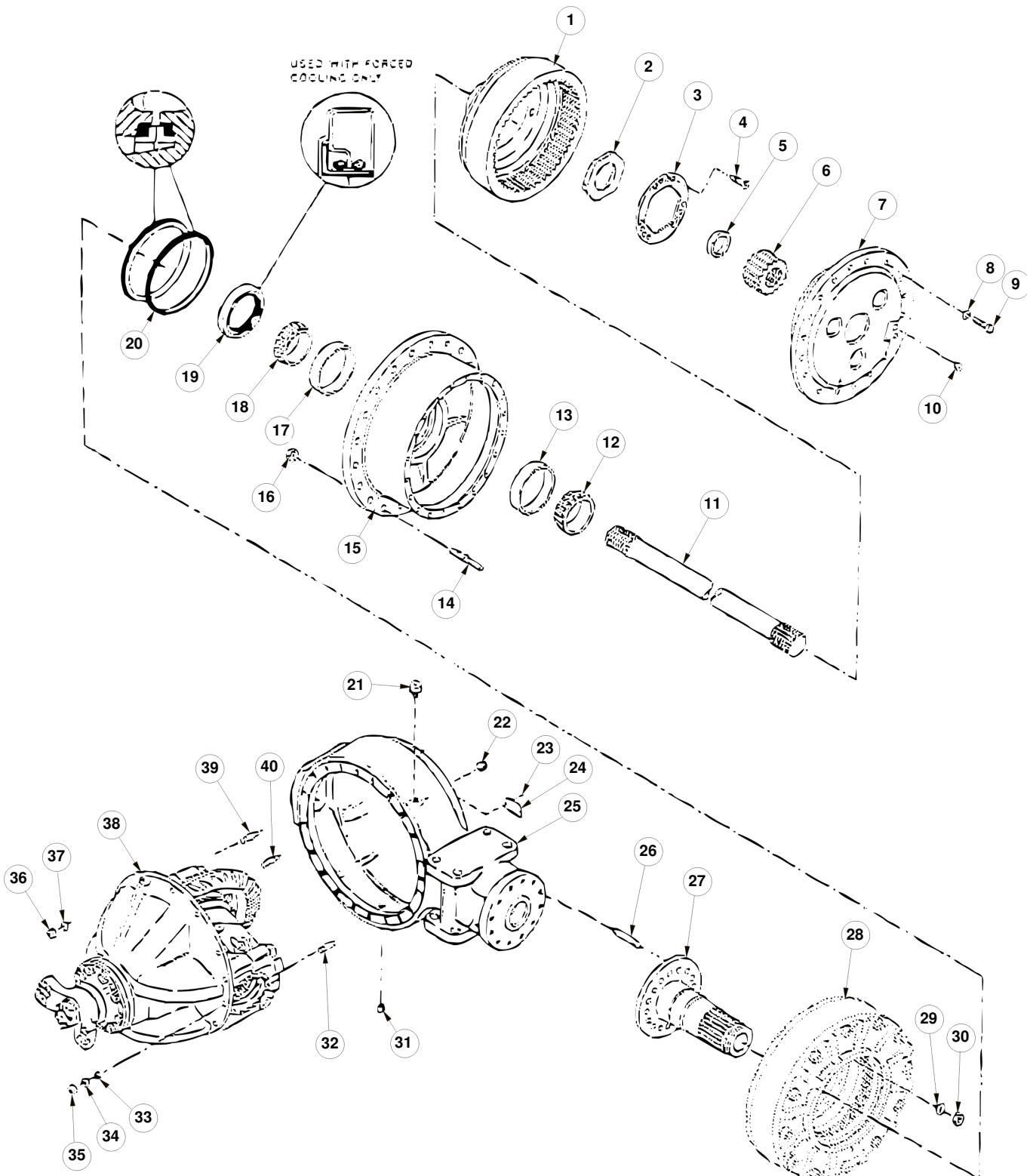
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	CL2109807	1	1	PLANET CARRIER
2	CL2109696	1	1	THRUST WASHER
3	CL17C612H	6	1	KEEPER PLATE SCREW
4	CL2111451	3	1	KEEPER PLATE
5	CL118774	6	1	THRUST WASHER
6	CL2109810	168	1	PINION NEEDLE ROLLER
7	CL2109809	3	1	PLANET GEAR
8	CL118775	3	1	PLANET NEEDLE ROLLER SPACER
9	CL2110403	3	1	PLANET SHAFT
10	CL2110404	3	1	PLANET SHAFT O_RING

A2U900-341031

## AXLE, POSI STOP

03-08-05

REV. 1



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-08-05

Sandvik Underground Mining Flameproof Equipment

**A2U900-341031**
**AXLE, POSI STOP**
**03-08-05**
**REV. 1**

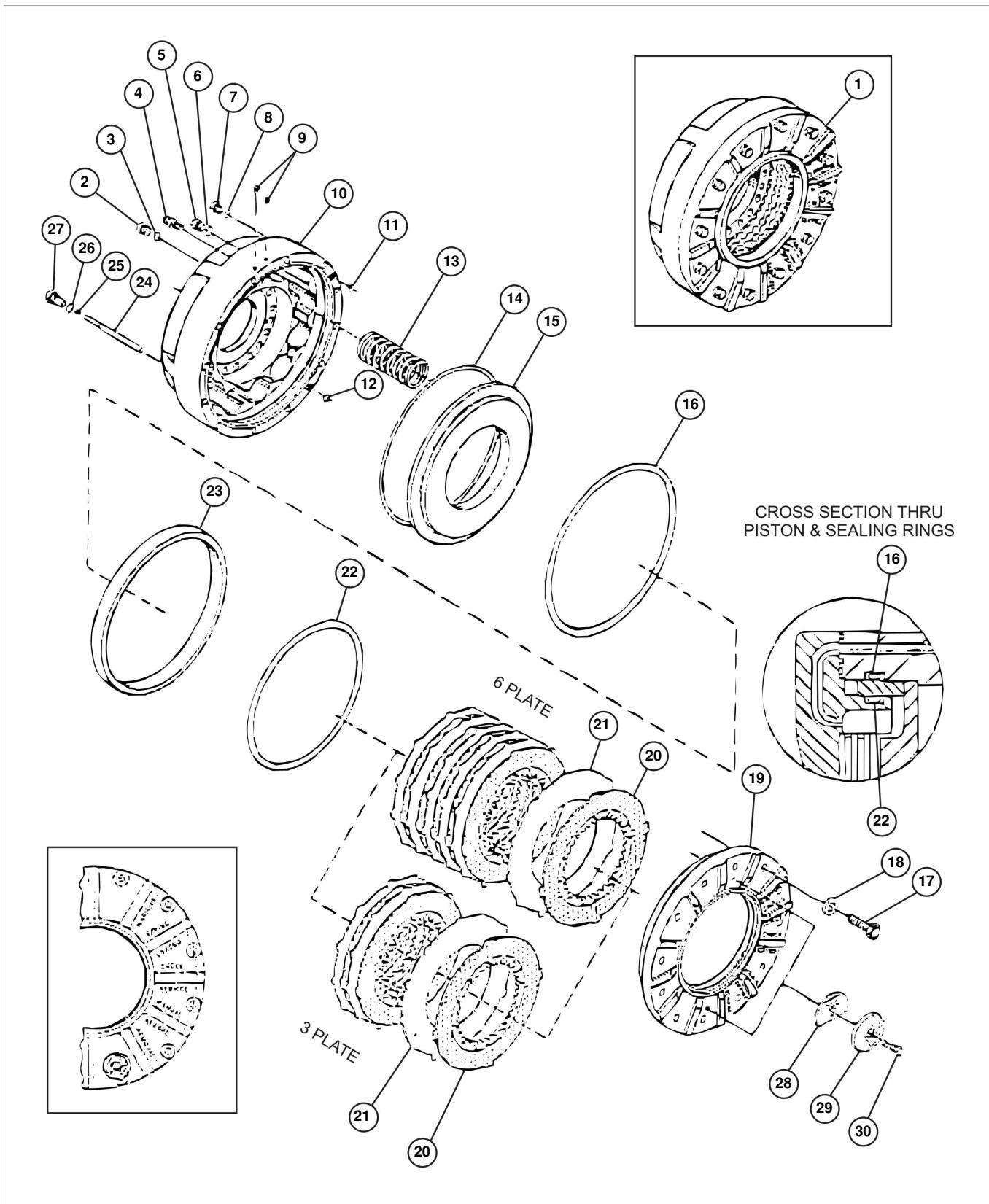
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	CL2114193		2	INTERNAL GEAR HUB
2	04698768		2	BEARING ADJUSTING NUT
3	04698769		2	BEARING ADJUSTING NUT LOCK
4	CL2114235		2	BEARING ADJUSTING SNAP RING
5	CL2109820		2	SUN GEAR THRUST WASHER
6	CL2109821		2	SUN GEAR
7	CL2109806	03-08-02-01	2	PLANET CARRIER ASSEMBLY
8	CL106547		40	CARRIER WASHER
9	CL117225		40	CARRIER CAP SCREW
10	CL24K-7		2	PLANET FILLER PLUG
11	CL2112733		2	AXLE SHAFT
12	CL2109823		2	OUTER HUB BEARING CONE
13	CL2109822		36	OUTER HUB BEARING CUP
14	CL120218		38	WHEEL STUD
15	CL2111410		2	HUB & CUP ASSEMBLY - INCLUDES ITEMS 13 & 17
16	CL86D-12H		38	WHEEL STUD NUT
17	CL2109824		2	INNER HUB BEARING CUP
18	CL127819		2	INNER HUB BEARING CONE
19	CL2107379		2	HUB SEAL
20	CL2106610		2	HUB FACE SEAL
21	CL121214		1	BREATHER
22	CL24K-7		1	HOUSING FILLER HOLE PLUG
23	CL6C-605H		2	SCREW
24				I.D. TAG
25	CL2115353		1	HOUSING
26	CL2114020		32	SPINDLE ATTACHING STUD
27	CL2111619		2	SPINDLE
27A	CL2111947		2	SPINDLE TO HOUSING SEAL
28	CL2112664	03-08-05-01	2	BRAKE ASSEMBLY
29	CL111656		32	SPINDLE ATTACHING STUD WASHER
30	CL64D-12H		32	SPINDLE ATTACHING STUD NUT
31	CL2111900		1	HOUSING DRAIN HOLE PLUG
32				NOT USED ON THIS MODEL
33				NOT USED ON THIS MODEL
34	CL1006547	14	1	WASHER
35				NOT USED ON THIS MODEL
36				NOT USED ON THIS MODEL
37				WASHER - SAM EAS ITEM 34
38	CL2115220	03-08-05-02	1	DIFFERENTIAL AND CARRIER ASSEMBLY
39	CL2114597		2	DIFFERENTIAL AND CARRIER ATTACHING CAPSCREW
40	CL2114595		12	DIFFERENTIAL AND CARRIER ATTACHING CAPSCREW
41	CL2111409		2	HUB, CUP & STUD ASSEMBLY - INCLUDING ITEMS 16 THRU 20

CL2112664

## POSI-STOP BRAKE ASSEMBLY

03-08-05-01

REV. 0



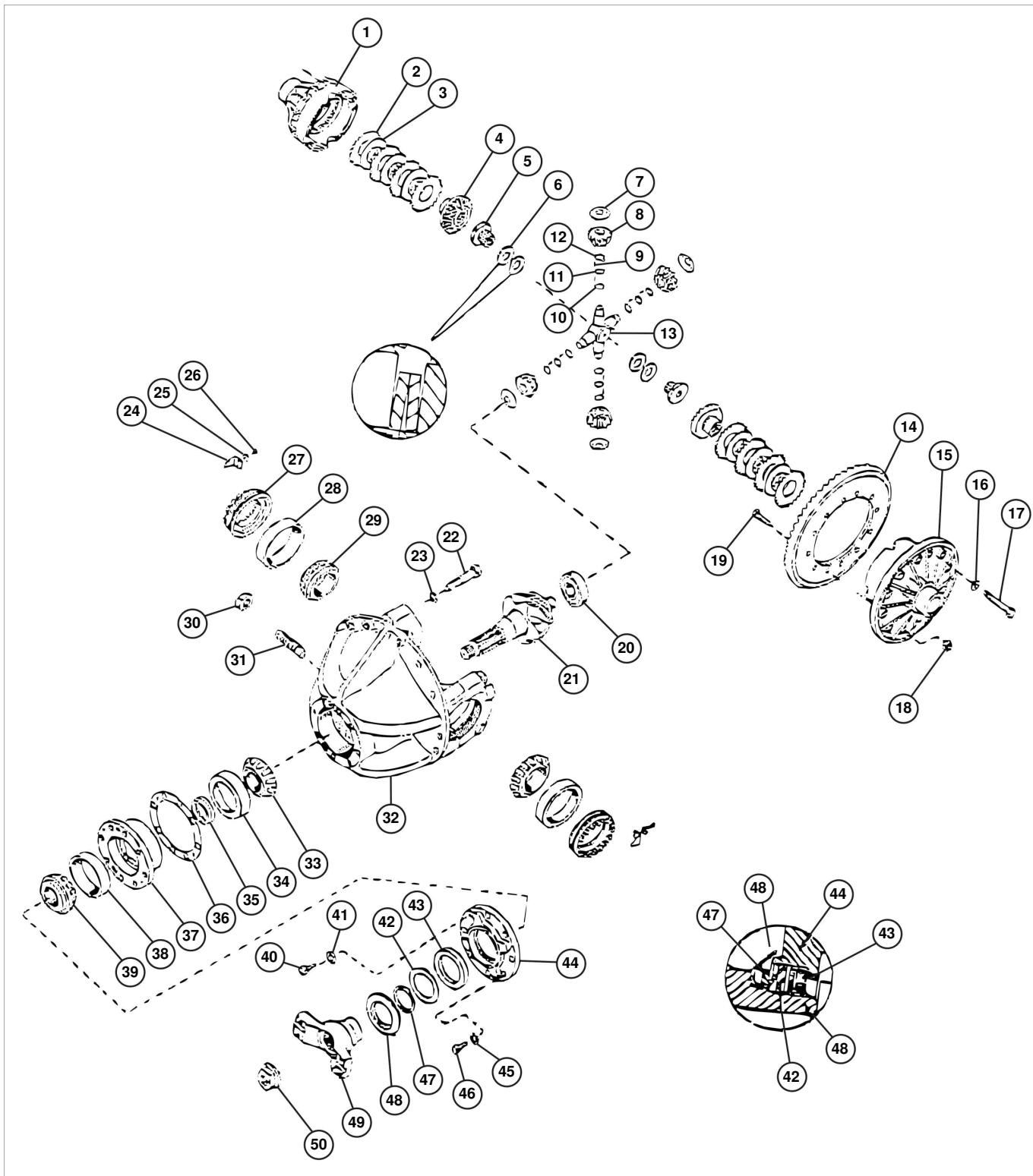
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 03-08-05-01

Sandvik Underground Mining Flameproof Equipment

**CL2112664****POSI-STOP BRAKE ASSEMBLY****03-08-05-01****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	CL2112664	1	1	MULTI-DISC ASSEMBLY- INCLUDES ITEMS 2 THRU 29 (QTY INDICATED FOR WHEEL END)
2	CL24K6	2	2	COOLING OUTLET PLUG - INCLUDES ITEM 3
3	CL91G6	2	2	COOLING OUTLET PLUG O_RING - PART OF ITEM 2
4	CL208805	2	2	BLEEDER SCREW (FOR TWO [2] WHEEL ENDS)
5	CL24K5	2	2	PLUG 9/16 - 18 - INCLUDES ITEM 6
6	CL91F5	2	2	O_RING - PART OF ITEM 5
7	CL24K4	1	1	ACTUATING FLUID PLUG
8	CL91F4	1	1	ACTUATING PLUG O_RING - PART OF ITEM 7
9	CL16F01	2	2	PLUG
10	CL2112665	1	1	BRAKE HOUSING
11	CL25K30020	1	1	INLET O_RING
12	CL25K30020	1	1	OUTLET O_RING
13	CL2110857	15	1	BRAKE APPLY SPRING
14	CL2110865	1	1	OUTER COVER O_RING SEAL
15	CL2110858	1	1	PISTON PRESSURE RING
16	CL2111165	1	1	OUTER PISTON SEAL ASSEMBLY
17	CL21111672	12	12	OUTER COVER ATTACHING CAPSCREW
18	CL104412	12	12	OUTER COVER ATTACHING WASHER
19	CL21111632	1	1	BRAKE OUTER COVER
20	CL2110852	6	6	FRICTION DISC & LINING ASSEMBLY
21	CL2110864	6	6	REACTION PLATE
22	CL2111166	1	1	INNER PISTON SEAL ASSEMBLY
23	CL2110861	1	1	BRAKE PISTON
24	CL2114372	1	1	WEAR INDICATOR PIN
25	CL76K10	2	2	INDICATOR PIN O_RING
26	CL91F-6	1	1	INDICATOR GUIDE O_RING
27	CL2111039	1	1	GUIDE AND WEAR PIN INDICATOR ASSEMBLY
28	CL2111168	2	2	WARNING STICKER
29	CL2111167	2	2	STICKER COVER
30	CL17C512H	2	2	STICKER CAPSCREW
31	CL816185	1	1	SEALING RING KIT - INCLUDES ITEMS 3, 6, 7, 11, 12, 14, 16, 22, 25 & 26
32	CL16F2	2	2	PLUG - NOT ILLUSTRATED

**CL2115220**  
**REV. 0****DIFFERENTIAL & CARRIER  
ASSEMBLY****03-08-05-02**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    03-08-05-02**

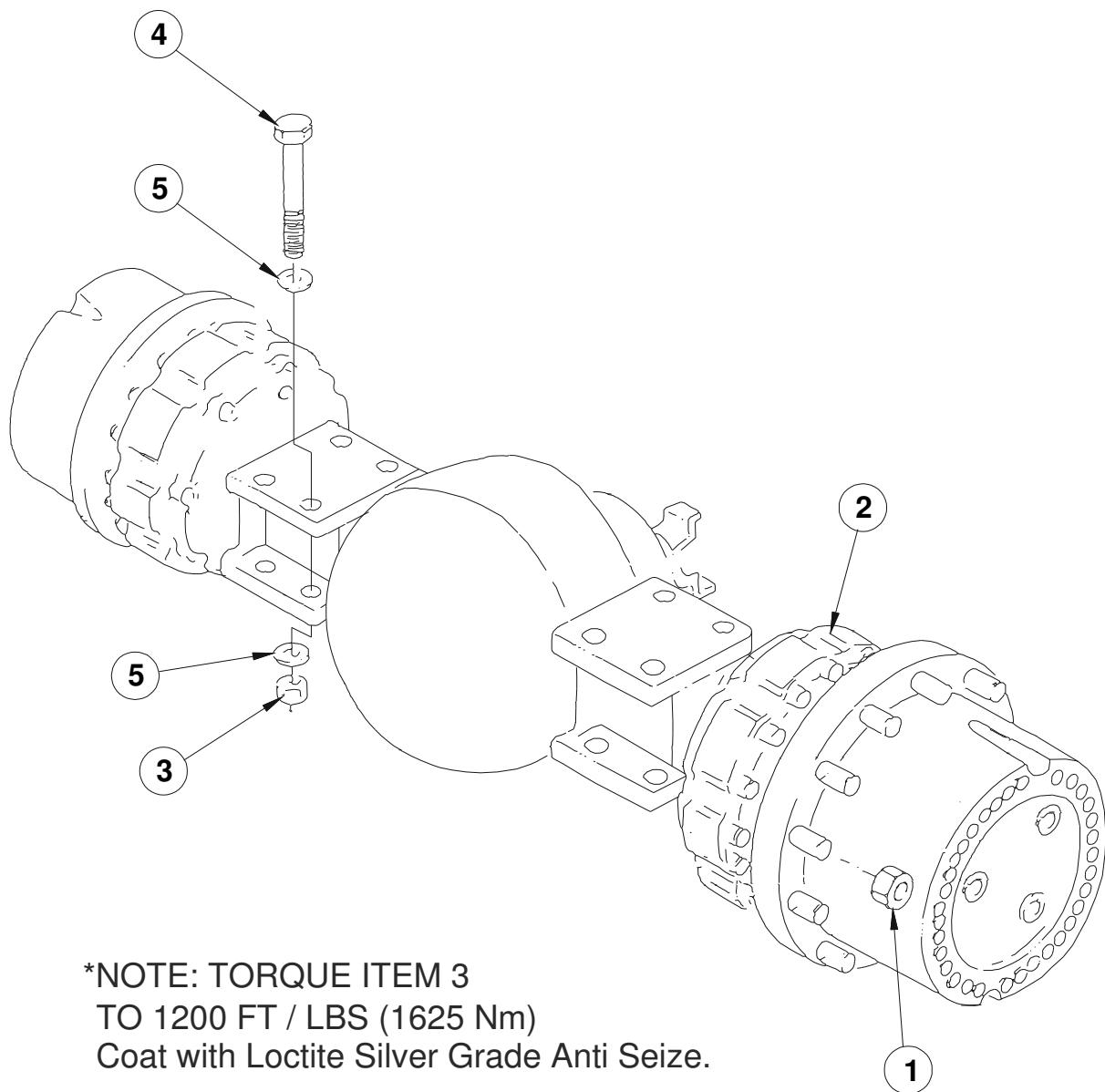
Sandvik Underground Mining Flameproof Equipment

**DIFFERENTIAL & CARRIER  
ASSEMBLY**
**03-08-05-02**
**CL2115220**
**REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	N.S.S.			DIFFERNTIAL PLAIN HALF CASE
2	CL2114639	8		OUTER CLUTCH DISC
3	CL2114524	6		INNER CLUTCH DISC
4	CL816274	1		PINION & SIDE GEAR KIT - INCLUDES ITEM 8
5				NOT USED ON THIS MODEL
6				NOT USED ON THIS MODEL
7	CL2114523	4		PINION THRUST WASHER
8	N.S.S.	4		PINION GEAR - PART OF ITEM 4
9	CL127815	248		NEEDLE ROLLER
10	CL125088	4		INNER NEEDLE THRUST WASHER
11	CL2115264	4		CENTER NEEDLE THRUST WASHER
12	CL2115264	4		OUTER NEEDLE THRUST WASHER
13	CL2111308	1		SPIDER
14	N.S.S.	1		RING GEAR - SEE ITEM 51
15	N.S.S.	1		FLANGE HALF CASE - SEE ITEM 53
16	CL106547	12		CASE BOLT WASHER
17	CL17C-988H	12		CASE BOLT
18	CL86D-09H	12		RING GEAR CAPSCREW NUT
19	CL101196	12		RING GEAR CAPSCREW
20	CL2114283	1		INNER PINION BEARING
21	N.S.S.	1		PINION - SEE ITEM 51
22	CL123832	4		DIFFERENTIAL CARRIER SCREWS
23	CL111658	4		DIFFERENTIAL CARRIER CAP LOCK WASHER
24	CL126468	2		ADJUSTING NUT LOCK
25	CL4E-06	2		ADJUSTING NUT LOCK BOLT L.W.
26	CL1C-614H	2		ADJUSTING NUT LOCK BOLT
27	CL124696	2		DIFFERENTIAL ADJUSTING NUT
28	CL2112958	2		DIFFERENTIAL BEARING CUP
29	CL2112957	2		DIFFERENTIAL BEARING CONE
30				NOT USED ON THIS MODEL
31				NOT USED ON THIS MODEL
32	CL2114263	1		DIFFERENTIAL CARRIER & CAP ASSEMBLY - INCLUDES ITEMS 22 & 23
33	CL2114363	1		CENTER PINION BEARING CONE
34	CL2114364	1		CENTER PINION BEARING CUP
35	CL842189	1		PINION BEARING SPACER KIT
36	CL125578	A/R		BEARING CAGE SHIM - MEDIUM
36A	CL125579	A/R		BEARING CAGE SHIM - THICK
37	CL107477	1		PINION BEARING CAGE & CUP ASSEMBLY - INLUDES ITEMS 34 & 38
38	CL2114367	1		OUTER PINION BEARING CUP
39	CL2114366	1		OUTER PINION BEARING CONE
40	CL17CM1260	1		RETAINER LOCATING CAPSCREW
41	CL4E-08	1		RETAINER LOCATING WASHER
42	CL2112382	1		PINION SEAL WASHER

**DIFFERENTIAL & CARRIER  
ASSEMBLY****03-08-05-02****CL2115220****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
43	CL128401		1	PINION OIL SEAL
44	CL2114198		1	PINION OIL SEAL RETAINER
45	CL4E-10		7	OIL SEAL RETAIER L.W.
46	CL7CM1660		7	OIL SEAL RETAINER CAPSCREW
47	CL2109547		1	V-RING SEAL
48				NOT USED ON THIS MODEL
49	CL2114204		1	COMPANION FLANGE
50	CL2111515		1	PINION SHAFT NUT
50A	CL2113884		1	SPACER O_RING
50B	CL25K60124		1	O_RING
51	CL2111250		1	RING GEAR & PINION SET - INCLUDES ITEMS 14 & 21
52	CL2115190		1	DIFFERENTIAL BODY SUB-ASSEMBLY - INCLUDES ITEMS 1 THRU 13, 14, 15, 16, 17
53	CL816287		1	DIFFERENTIAL CASE ASSEMBLY - INCLUDES ITEMS 1, 15, 16, 17

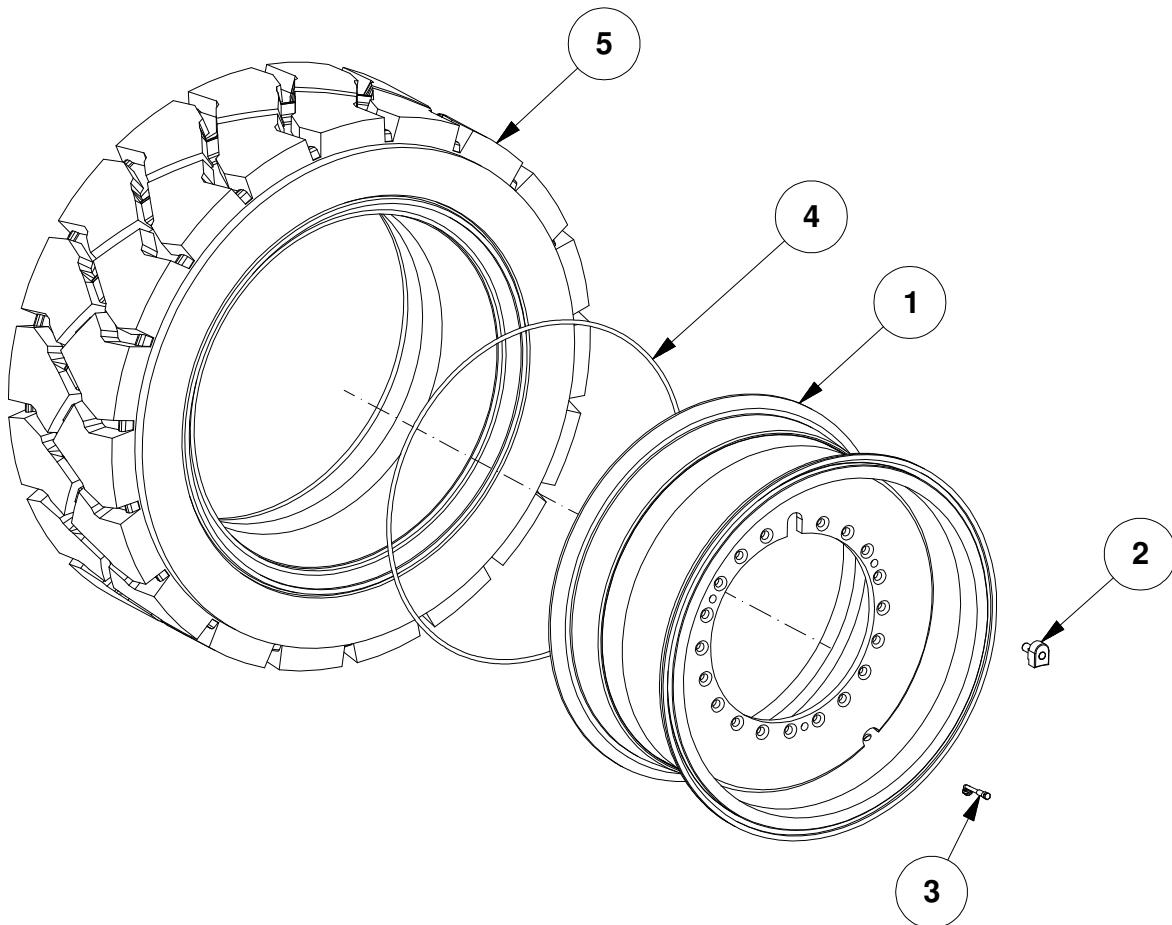
**A2U220-340059  
REV. 1****REAR AXLE GROUP****03-09**

\*NOTE: TORQUE ITEM 3  
TO 1200 FT / LBS (1625 Nm)  
Coat with Loctite Silver Grade Anti Seize.

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-340059****REAR AXLE GROUP****03-09****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	64113616		38	WHEEL NUT, HEX.
2	A2U900-341031	03-08-05	1	AXLE, POSI STOP
3	T20ZG		8	NUT, HEX
4	A2U130-196132		8	BOLT, HEX HD
5	W20HB		16	WASHER, FLAT

**BU00001435**  
**REV. 0****WHEEL AND TYRE GROUP LS190/  
191 BIS****03-10**

WHEEL ASSEMBLY DETAILS	
VEHICLE	LS191, LS190
AXLE TYPE	DANA 16D2149
TYRE SIZE	1425x450-34/42PR
WHEEL LOADING	12490kg

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**PARTS MANUAL****WHEEL AND TYRE GROUP LS190/  
191 BIS**

03-10

**BU00001435****REV. 0**

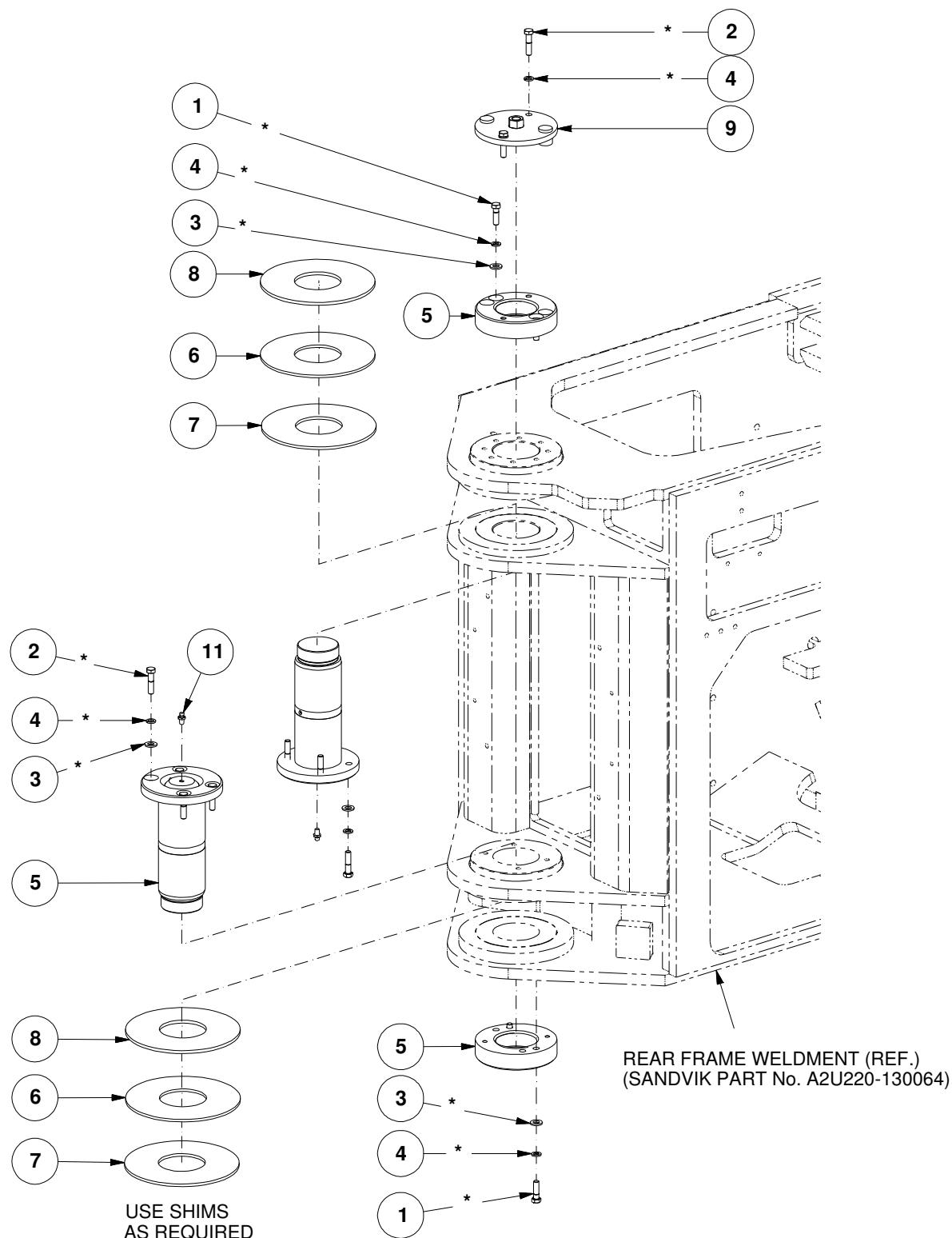
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-371066		1	RIM ASSEMBLY
2	A2U220-395013		1	RIM LOCATING KEY
3	65392009		1	Valve Assembly, Tyre
4	BU00001443		1	812.8MM O RING RUBBER
5	A2U220-372026		1	1425 x 450 - 34/42TL TYRE

**FRAME RELATED**

04-00

**REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	A2U220-110062	04-01		REAR FRAME ARTICULATION GROUP LS190/ LS191
	A2U220-111140	04-01		REAR FRAME GROUP - LS190
	BD00026960	04-04		FRONT FRAME COMPLETE LS190
	A2U220-190217	04-05		BODYPARTS GROUP
	A2U220-400018	04-06		OPERATORS COMPARTMENT GROUP - 220 LHD
	A2U220-190220	04-07		COVERS GROUP - REAR- LS190 STD / NAUT.
	A2U220-360008	04-08		BOLSTER GROUP
	A2U220-390041	04-08		BOLSTER STOP GROUP
	A2U220-120119	04-09		CERTIFIED CANOPY LS190/ LS191 2.2M
	A2U220-160188	04-10		QDS CRADLE GROUP, LS190/ LS191
	A2U220-150037	04-11		LIFT ARM GROUP LS190
	A2U220-170066	04-14		NAMEPLATE GROUP, ED10
	BD00000900	04-15		SEAT GROUP, JEL
	350-4320531	04-17		CENTRAL LUBE GROUP
	A2U900-190676	04-21		DOCUMENT TUBE LS170/ LS190
	BD00010199	04-45		PIN GROUP, LS191
	A2U220-450061	04-55		DASH PANEL-PARK BRAKE GRP. LS170/ 190

**A2U220-110062**
**REAR FRAME ARTICULATION GRP  
LS190/ LS191**
**04-01**
**REV. 3**


PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

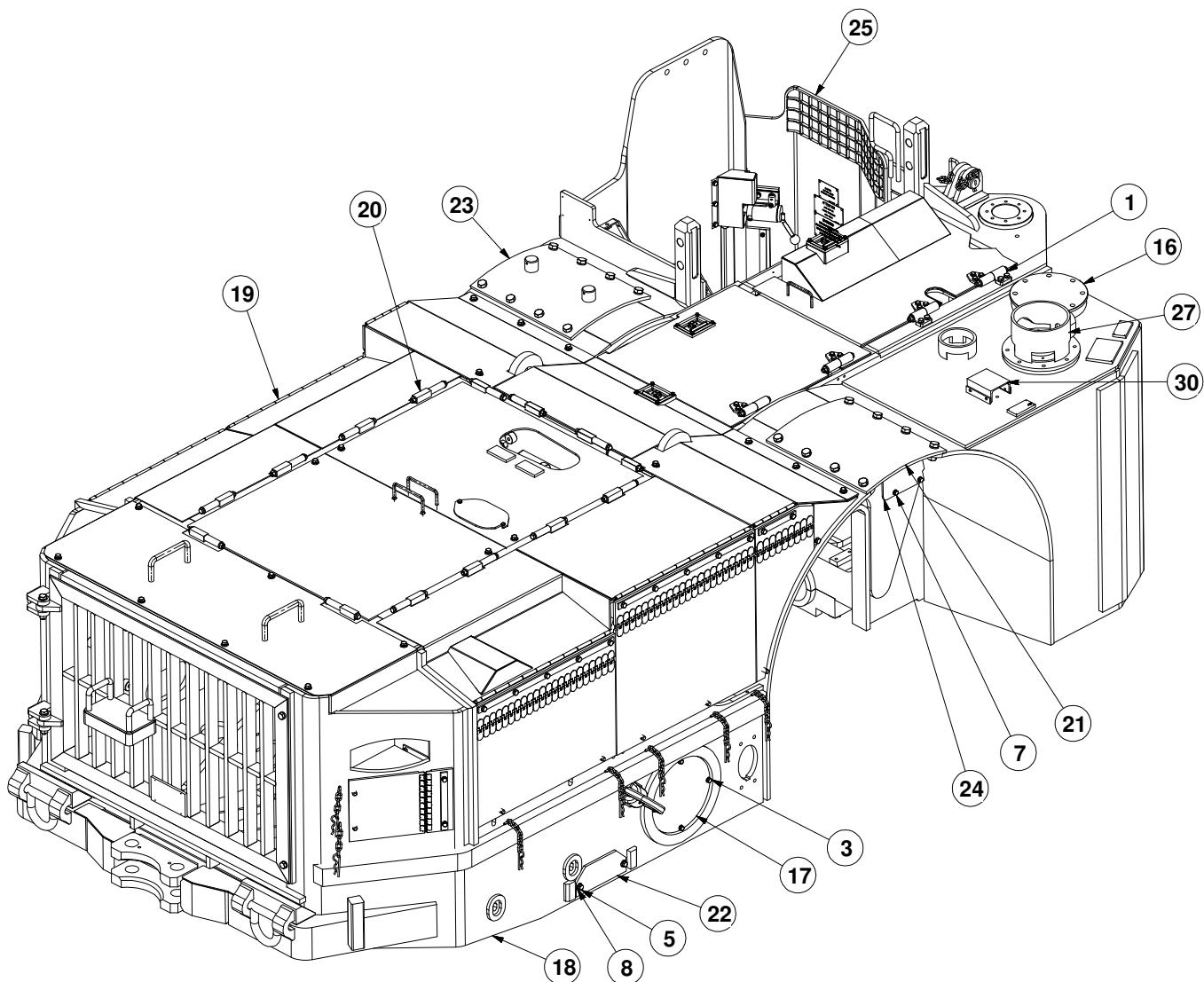
**REAR FRAME ARTICULATION GRP  
LS190/ LS191**

04-01

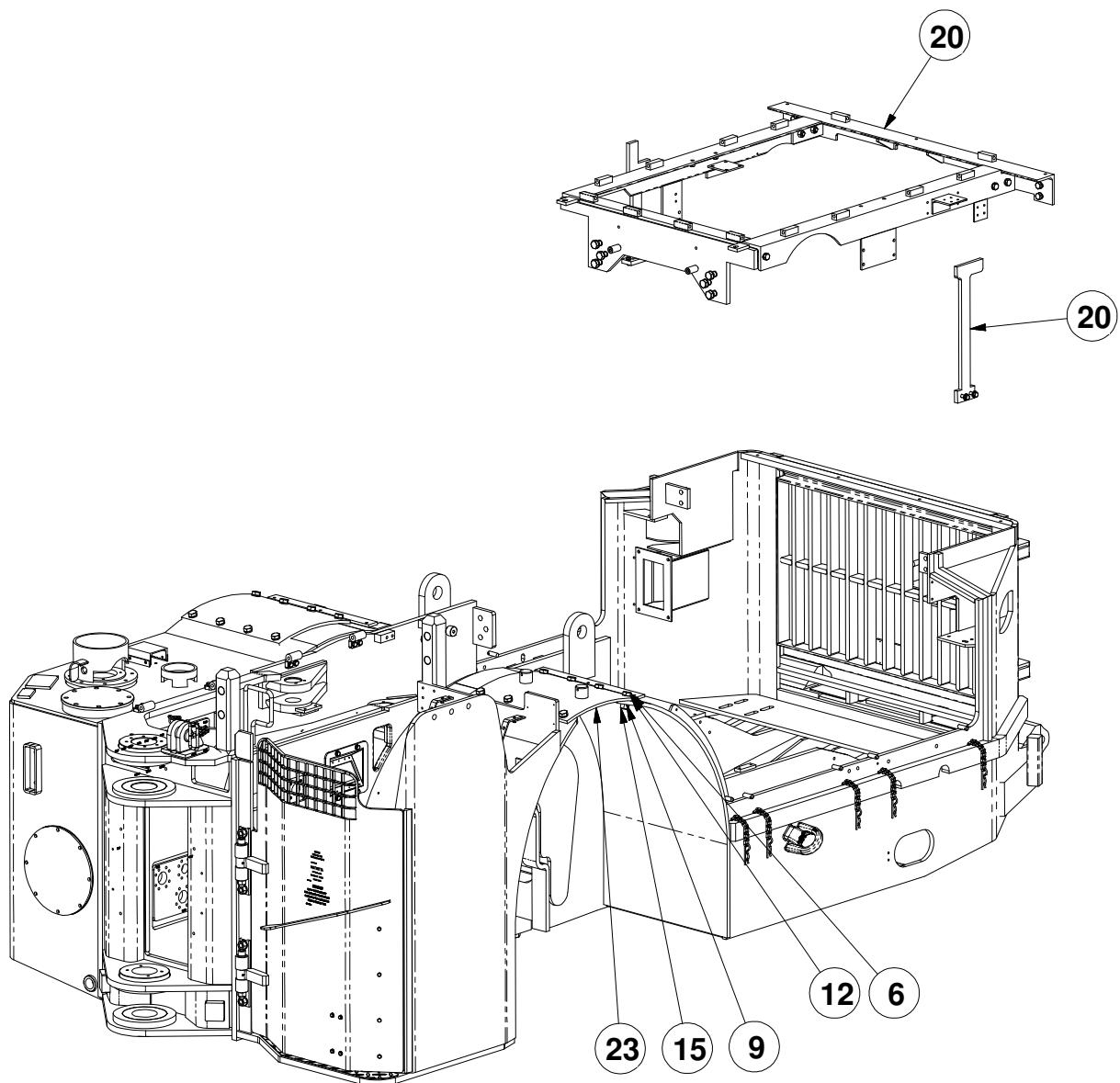
**A2U220-110062****REV. 3**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502847*	4		Bolt Hex Head, M12 x 40mm M12 x 40 Long
2	445502849*	10		Bolt Hex Head, M12 x 50mm
3	450061619*	12		Washer, Flat, 12 mm
4	450081124*	14		Washer, Spring, 12 mm
5	A2U220-193455	2		ARTICULATION PIN & NUT ASSEMBLY
6	A2U220-195083	2		Washer, Thrust 5.84mm
7	A2U220-195084	2		Washer, Thrust 6.22mm
8	A2U220-195085	2		Washer, Thrust 6.86mm
9	A2U220-810018	1		Tool Articulation
*	BD00010497	1		Fastener Kit
11	P1FG	2		GREASE NIPPLE 1/8" 1/8"

**A2U220-111140**  
**REV. 10**

**REAR FRAME GROUP - LS190****04-01**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

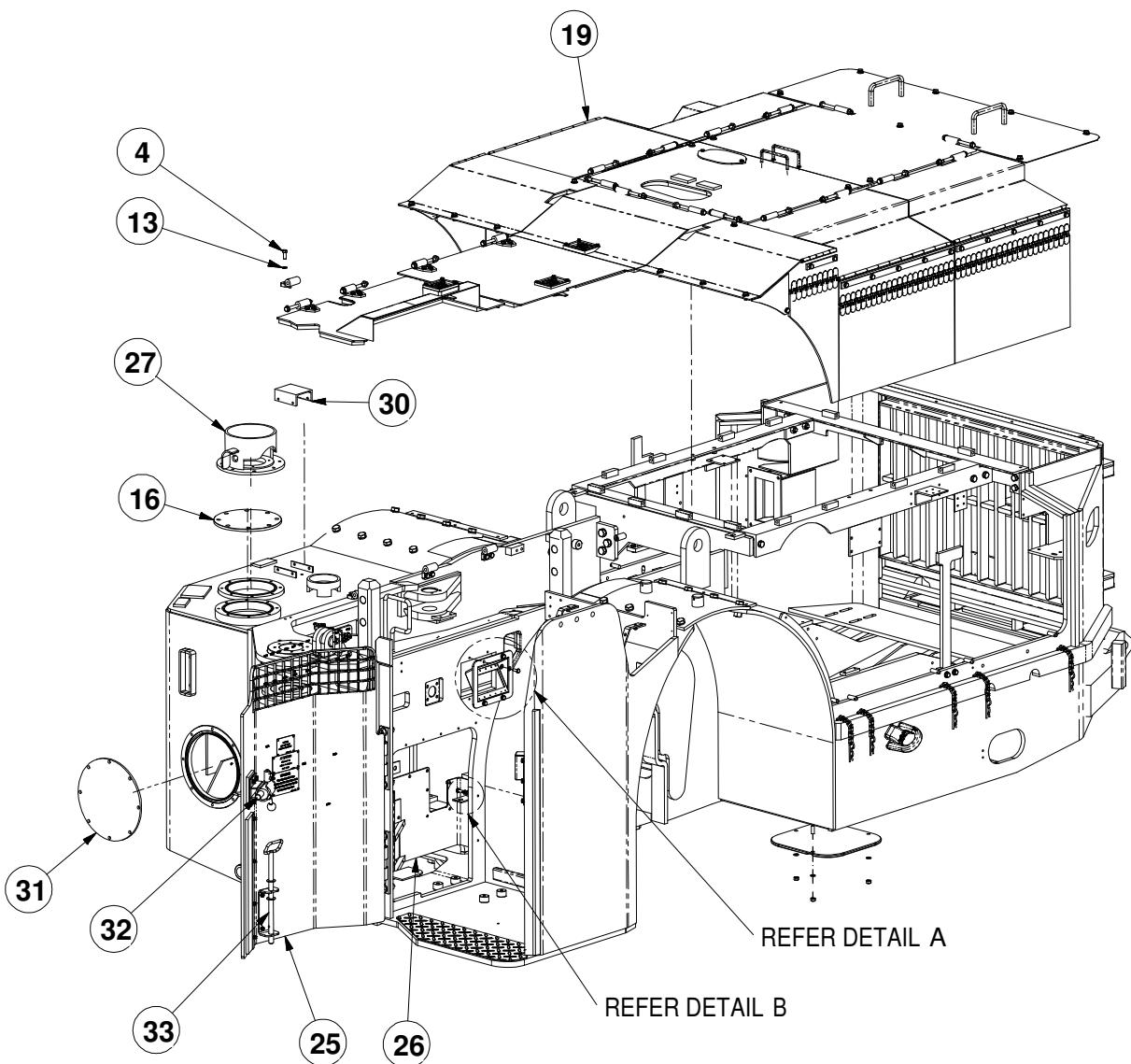
**A2U220-111140****REAR FRAME GROUP - LS190****04-01****REV. 10**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-01**

Sandvik Underground Mining Flameproof Equipment

**A2U220-111140**  
**REV. 10**

**REAR FRAME GROUP - LS190****04-01**

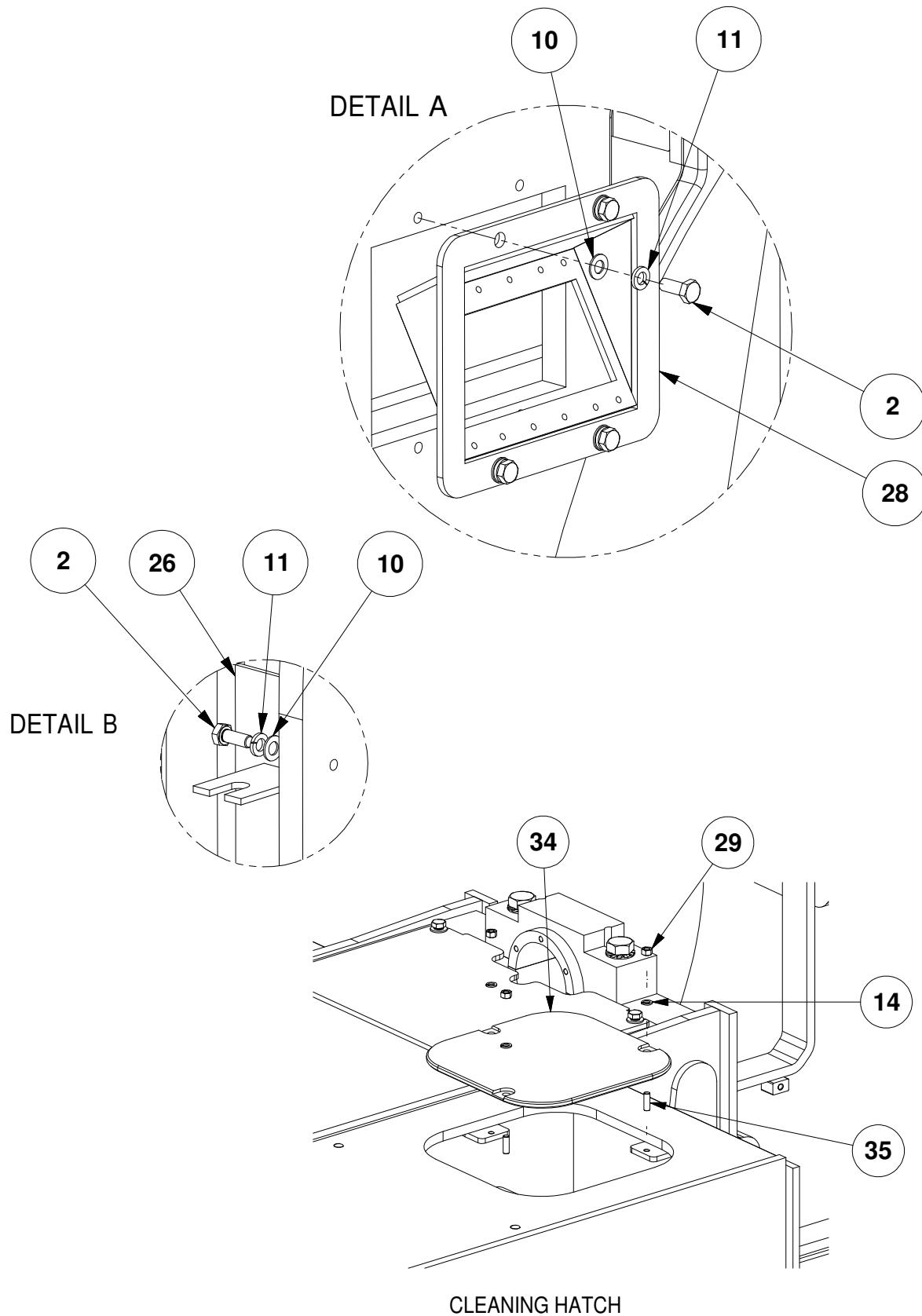
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

A2U220-111140

**REAR FRAME GROUP - LS190**

04-01

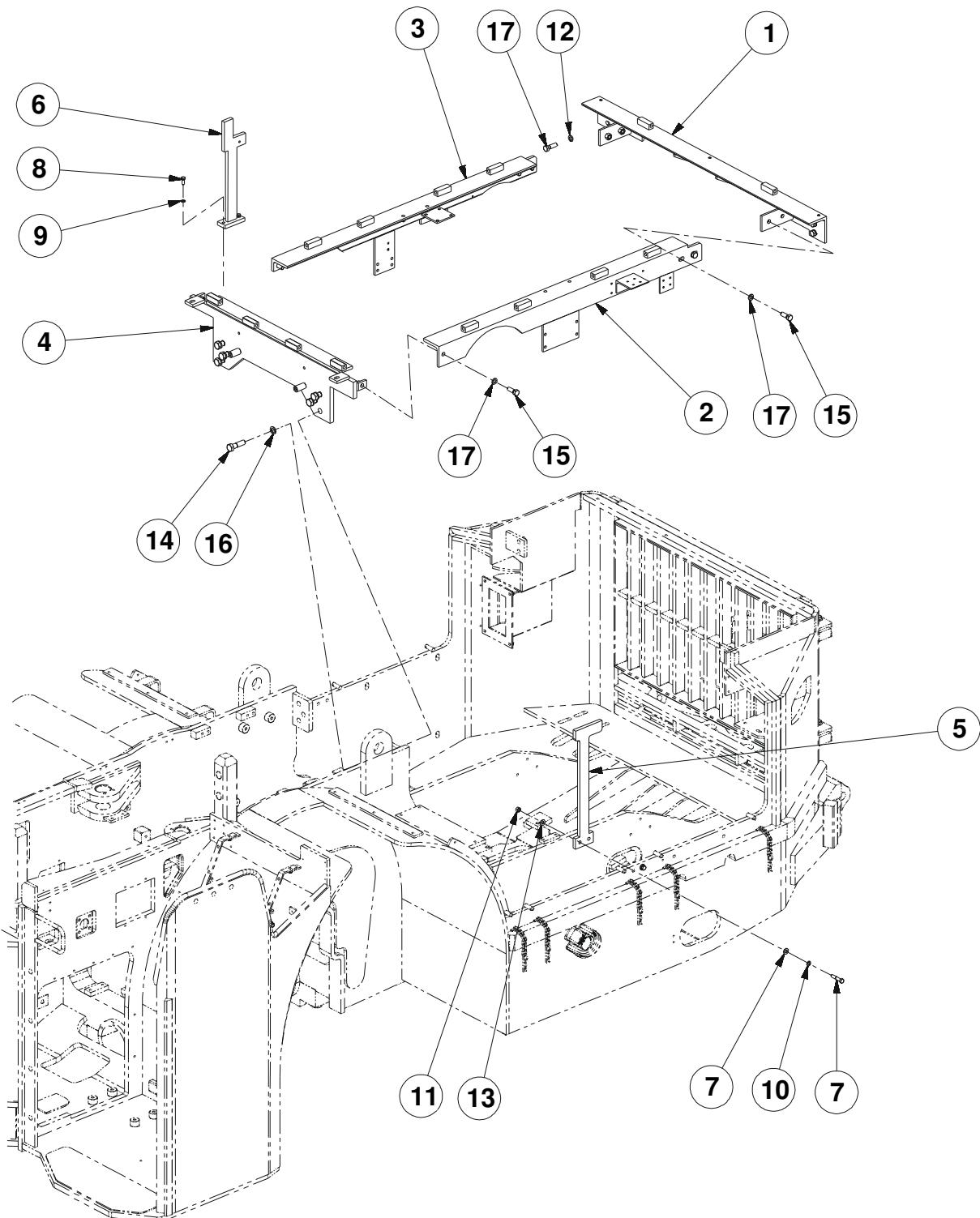
REV. 10



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-111140**
**REAR FRAME GROUP - LS190**
**04-01**
**REV. 10**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	246631		4	Hinge
2	445502801		8	Bolt Hex Head, M10 x 25mm
3	445502802		4	Bolt Hex Head, M10 x 30mm
4	445502843		8	Bolt Hex Head, M12 x 30mm
5	445502845		2	Bolt Hex Head, M12 x 35mm
6	445503072		16	Bolt Hex Head, M20 x 55mm
7	445512804		3	Bolt Hex Head, M10 x 35mm
8	450061619		2	Washer, Flat, 12 mm
9	450061624		16	Washer, Flat, 20 mm
10	450062508		15	Washer, Flat, 10 mm
11	450081022		15	Washer, Spring, 10 mm
12	450081034		16	asher, Spring, 20 mm
13	450081124		10	Washer, Spring, 12 mm
14	455309036		3	Hex Nut, M12 X 1.75
15	455309044		16	Hex Nut, M20 X 2.5
16	A2U130-197432		1	Cover
17	A2U130-197628		1	Cover Make Up Tank
18	A2U220-111132		1	Rear Frame Assembly
19	A2U220-190220	04-07		Covers Assembly Group - ED10
20	A2U220-190356	04-01-01	1	Cover Support Group - LS190
21	A2U220-197634		1	Cover, Top Rhs Mudguard
22	A2U220-197687		1	Drain Plug Cover
23	A2U220-197750		1	Cover, Top Lhs Mudguard
24	A2U220-197852		1	Cover Wheel Arch
25	A2U220-487081	04-16	1	Cabin Door Assembly
26	A2U220-491238		1	Operators Kick-Plate
27	A2U220-531033		1	Cover Return Filter
28	A2U220-591346		1	Mounting Bracket, Bucket Controls
29	A2U900-392130		3	Washer, Spring, 12 mm
30	A2U900-531035		1	Guard Cover Air Valve
31	A2U900-532024		1	Cover - Hyd Tank
32	BD00002884	04-01-32	1	Door Interlock Group
33	BD00010396		1	Anti-Slam Door Mechanism Group
34	BD00016063		1	HATCH
35	BD00016231		3	STUD M12 x 1.75 x 30

**A2U220-190356****COVER SUPPORT GROUP LS190****04-01-01****REV. 1**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-01-01**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U220-190356****COVER SUPPORT GROUP LS190****04-01-01****REV. 1**

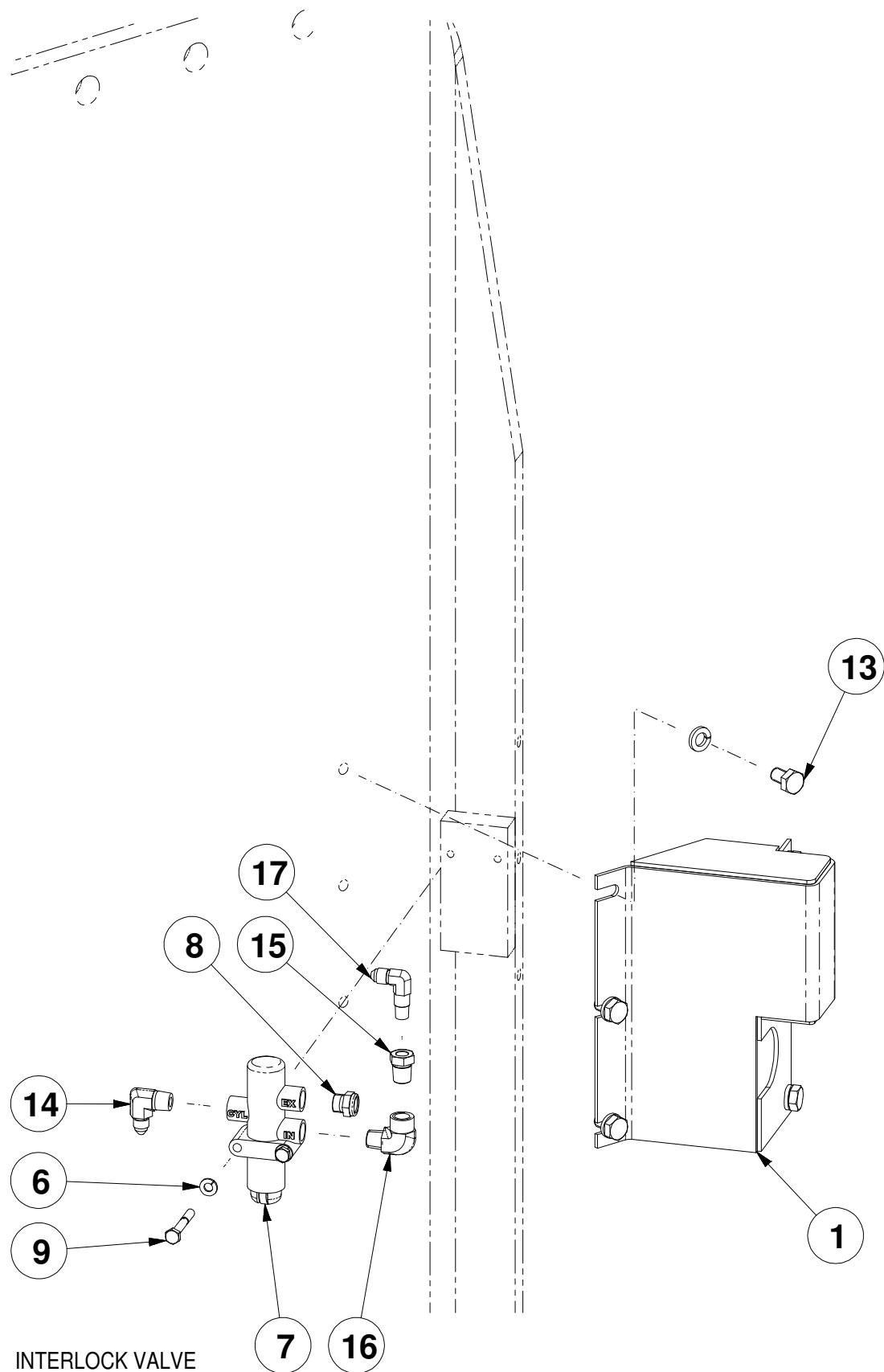
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-1911014	1	1	Cover Support Rail
2	A2U220-1911015	1	1	Cover Support Rail, Lhs
3	A2U220-1911016	1	1	Cover Support Rail, Rhs
4	A2U220-1911017	1	1	Cover Support Rail
5	A2U220-197748	1	1	Cover Support
6	A2U220-197862	1	1	Support, Covers
7	445402851	2	2	Bolt Hex Head, M12 X 60Mm Long
8	445502801	2	2	Bolt Hex Head, M10 X 25Mm Long
9	450081022	2	2	Washer, Spring, 10 Mm
10	450081124	2	2	Washer, Spring, 12 Mm
11	455309036	2	2	Hex Nut, M12 X 1.75
12	445502939	4	4	Bolt Hex Head, M16 X 50Mm Long
13	450061619	4	4	Washer, Flat, 12 Mm
14	445403075	6	6	Bolt Hex Head, M20 X 70Mm Long
15	445502938	6	6	Bolt Hex Head, M16 X 45Mm Long
16	450081034	6	6	Washer, Spring, 20 Mm
17	450081030	10	10	Washer, Spring, 16 Mm

BD00002884

**DOOR INTERLOCK GROUP**

04-01-32

REV. 0



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

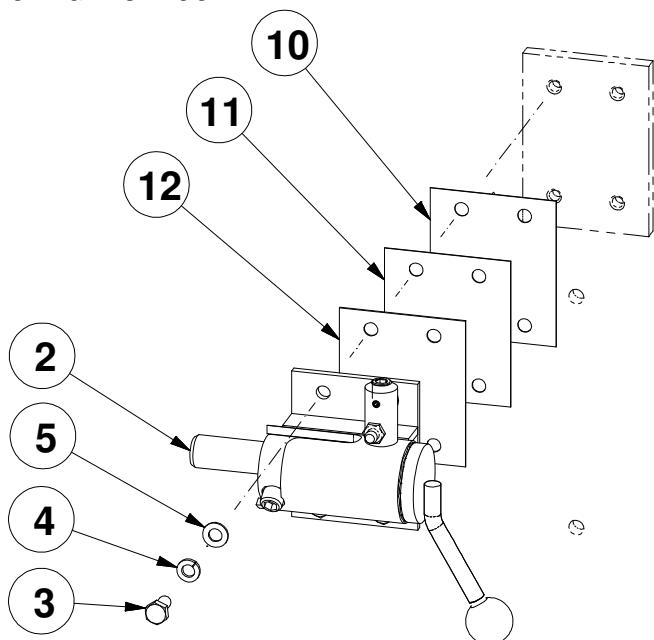
BD00002884

**DOOR INTERLOCK GROUP**

04-01-32

REV. 0

NOTE:  
USE COMPONENTS 10,11 & 12  
TO FIT DOOR LATCH  
TO GIVE CORRECT  
TENSION AGAINST DOOR



DOOR LATCH EXPLOSION

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**BD00002884****DOOR INTERLOCK GROUP****04-01-32****REV. 0**

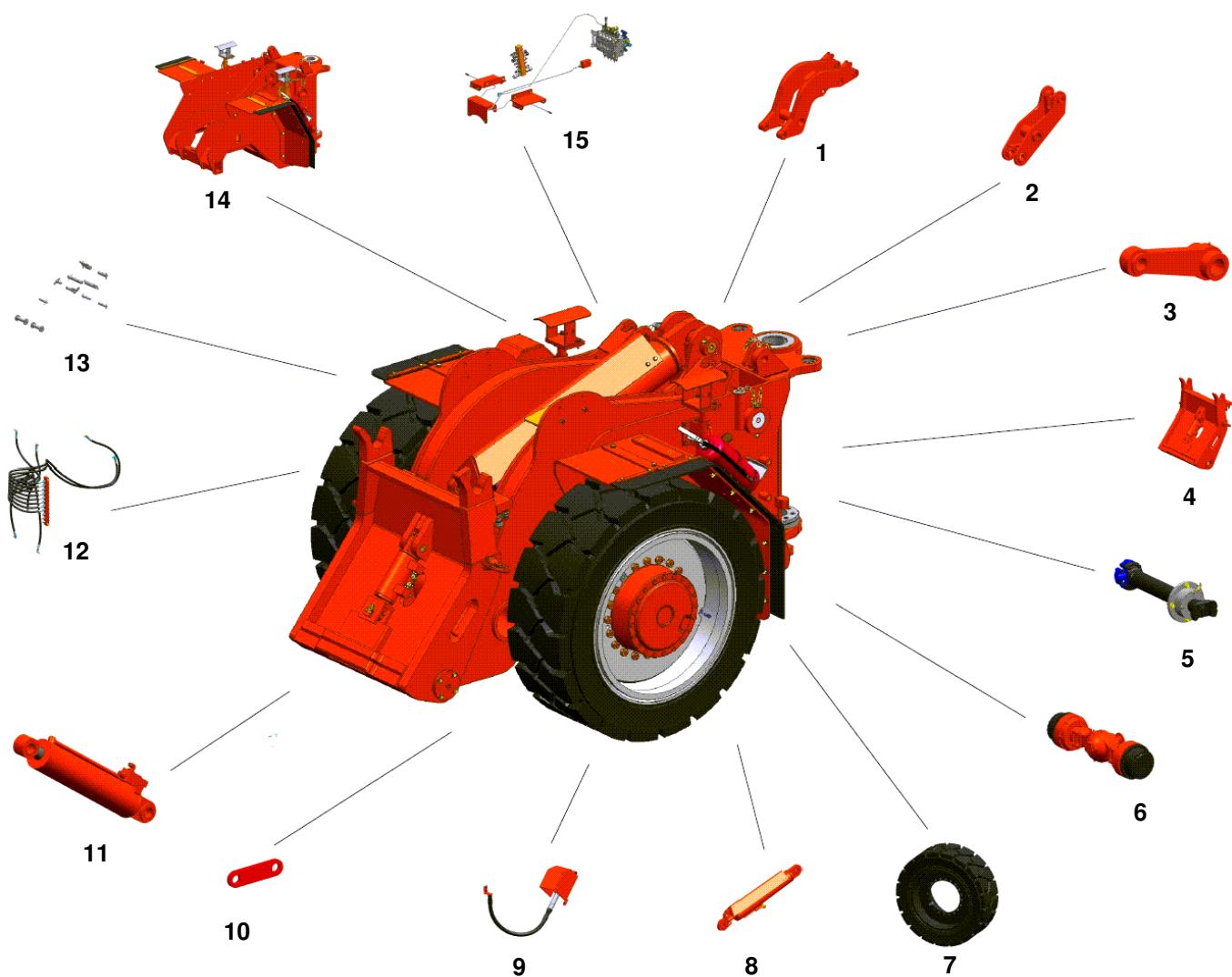
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-491236	1	1	Door Valve Cover
2	A2U220-491279	1	1	Door Latch
3	A2U900-392025	4	1	Bolt Hex Head, M10 x 20mm Long
4	A2U900-392100	10	1	Washer, Spring, 10 mm
5	A2U900-392104	4	1	Washer, Flat, 10 mm
6	A2U900-392200	2	1	Washer, Spring, 6 mm
7	A2U900-694075	1	1	VALVE
8	A2U900-694078	1	1	AIR SILENCER
9	BD00002991	2	1	Bolt Hex Head, M6 x 45mm Long
10	BD00003301	1	1	Shim - 0.55mm
11	BD00003302	1	1	Shim - 0.9mm
12	BD00003316	1	1	Shim - 1.15mm
13	BD00003321	6	1	Bolt Hex Head, M10 x 16mm Long
14	D17-0407	1	1	Elbow 90, 1/4" NPT x 7/16" JIC M/M
15	D21-0402	1	1	Reducing Bush, 1/4" NPT x 1/8" NPT
16	D37-0404	1	1	Elbow 90, 1/4" NPT x 1/4" NPT M/F
17	DE17-0207	1	1	Elbow 90, 1/8" NPT EXTD x 7/16" JIC M/M

BD00026960

**FRONT FRAME COMPLETE LS190**

04-04

REV. 0



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-04**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

BD00026960

FRONT FRAME COMPLETE LS190

04-04

REV. 0

### REFERENCE DRAWINGS

SCHEMATIC - HYDRAULIC (STANDARD)	A2U220-501354
SCHEMATIC - PNEUMATIC (STANDARD)	A2U220-601194
LS190 MASTER ASSY	LS191_MASTER_ASSY

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 04-04

Sandvik Underground Mining Flameproof Equipment

**BD00026960****FRONT FRAME COMPLETE LS190****04-04****REV. 0**

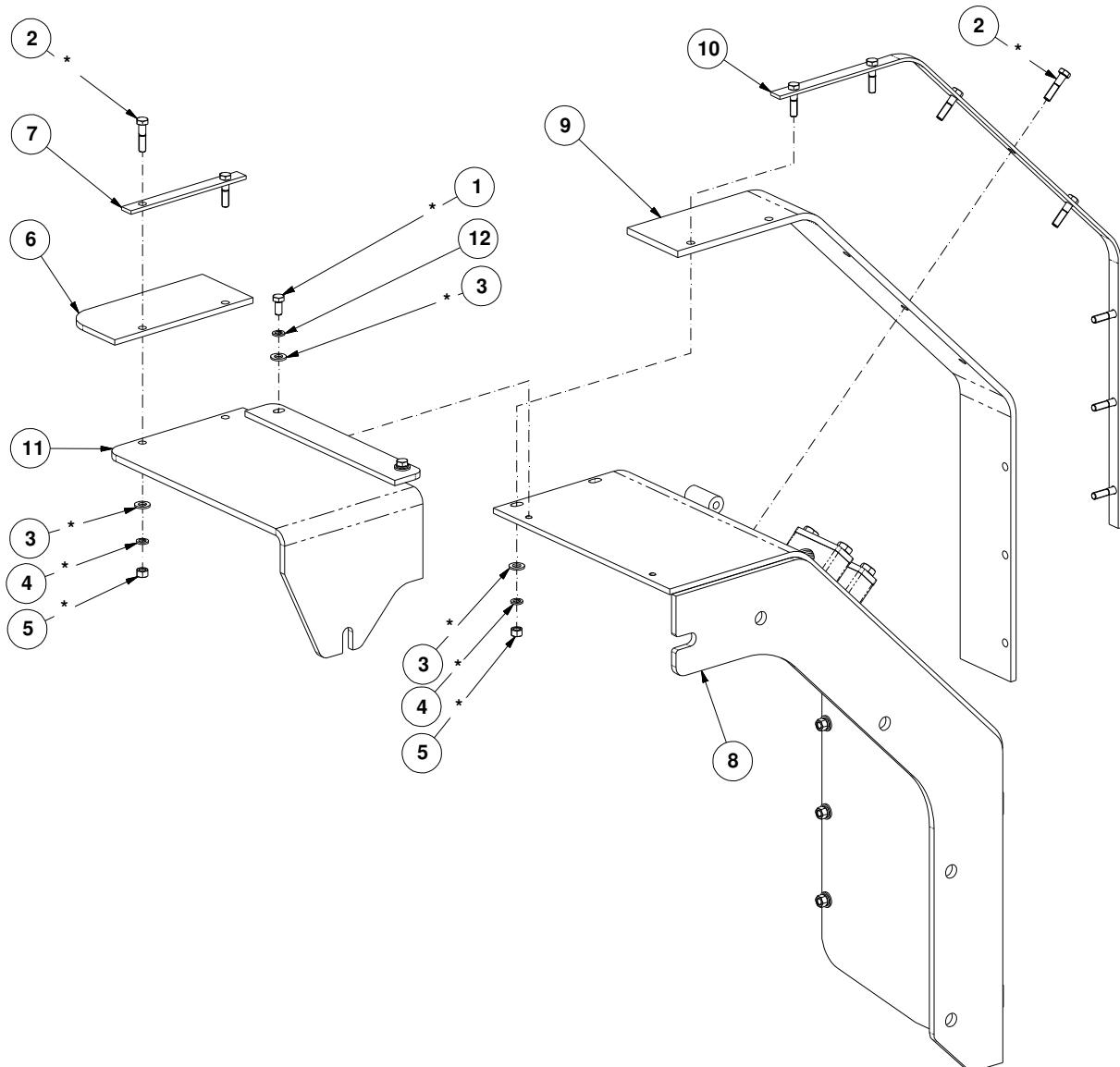
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-151042	04-11-04	1	Lift Arm W/ Bushes
2	A2U220-152018	04-11-03	1	Intermediate Link W/ Bushes
3	A2U220-152019	04-11-02	1	Lower Link W/Bushes
4	A2U220-160188	04-10	1	QDS CRADLE
5	A2U220-320029	03-05	1	FRONT DRIVELINE GROUP
6	A2U220-340060	03-08	1	AXLE FRONT FRAME
8	A2U220-550088-2	05-15	1	Dump Cylinder Group
9	BD00001577	05-02	1	HYDRAULIC FILL PUMP GROUP
10	BD00001957		1	Locking Bar
11	BD00006965-2	05-16	2	Lift Cylinder Group
12	BD00008013	04-04-11	1	Lines Group - Lube (Front)
13	BD00010199	04-45	1	Pin Group
14	BD00015027	04-04-13	1	FRONT FRAME GROUP
15	BD00026963	05-09	1	Front Hydraulics Group

A2U220-140014

**FENDER GROUP - ODS LS191**

04-04-09

**REV. 2**



**NOTES:**

1. ALL FASTENERS TO BE ZINC PLATED.

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    04-04-09**

Sandvik Underground Mining Flameproof Equipment

**A2U220-140014****FENDER GROUP - ODS LS191****04-04-09****REV. 2**

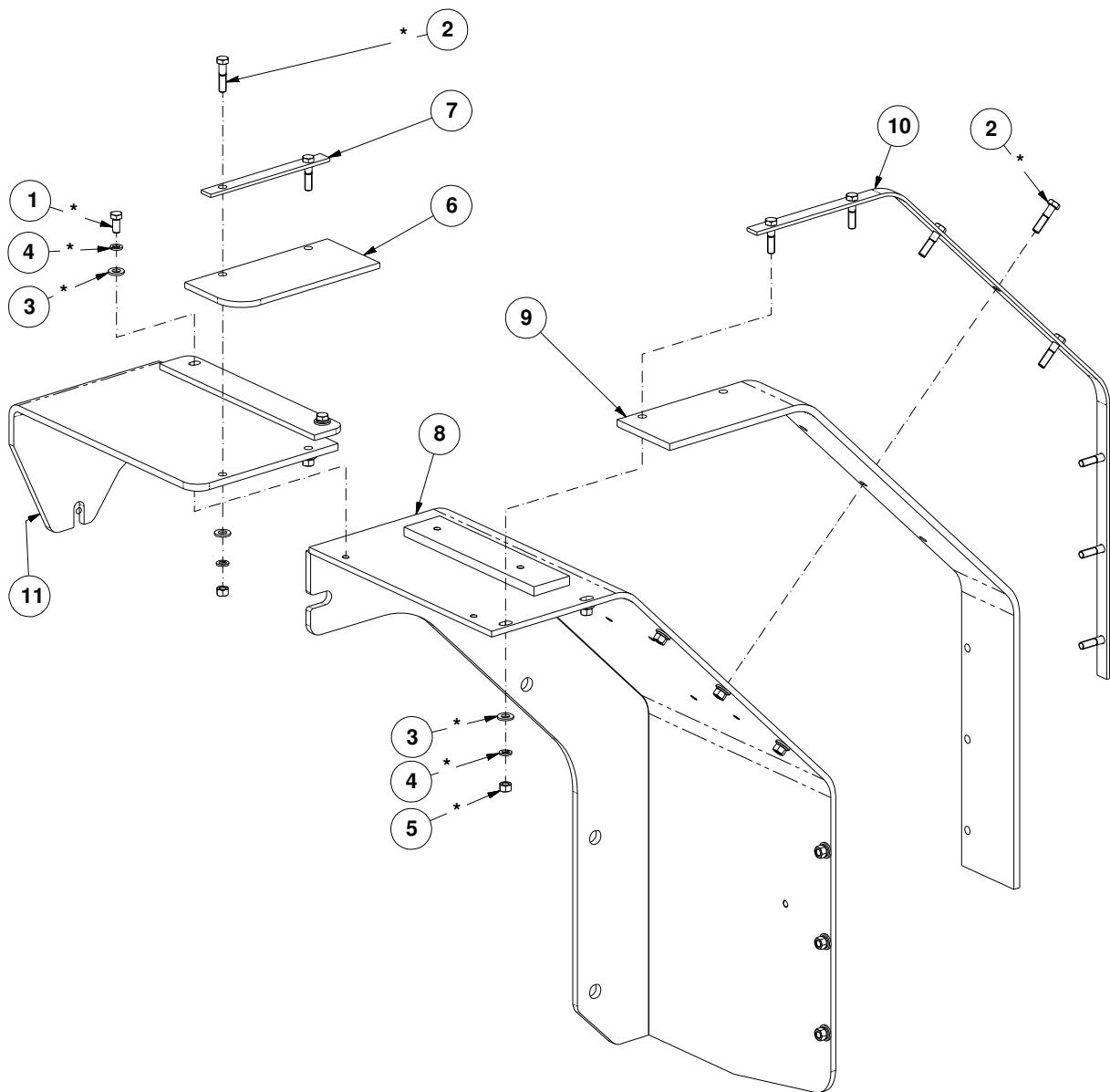
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502842*	2		Bolt Hex Head, M12 x 25mm Long
2	445502849*	10		Bolt Hex Head, M12 x 50mm Long
3	450061619*	12		Washer, Flat, 12 mm
4	450081124*	10		Washer, Spring, 12 mm
5	455309036*	10		Hex Nut, M12 X 1.75
6	A2U220-141058	1		Rubber Mudflap
7	A2U220-141059	1		Clamp Strap
8	A2U220-141081	1		Fender Weldment - ODS
9	A2U220-142011	1		Mud Flap - ODS
10	A2U220-1911426	1		Clamp Strap
11	A2U220-1911429	1		Fender Extension - Drivers Side
*	BD00003755	1		Fastener Kit

A2U220-140013

**FENDER GROUP DS, LS191**

04-04-10

REV. 2



## NOTES:

1. ALL FASTENERS TO BE ZINC PLATED.

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS



## PARTS MANUAL

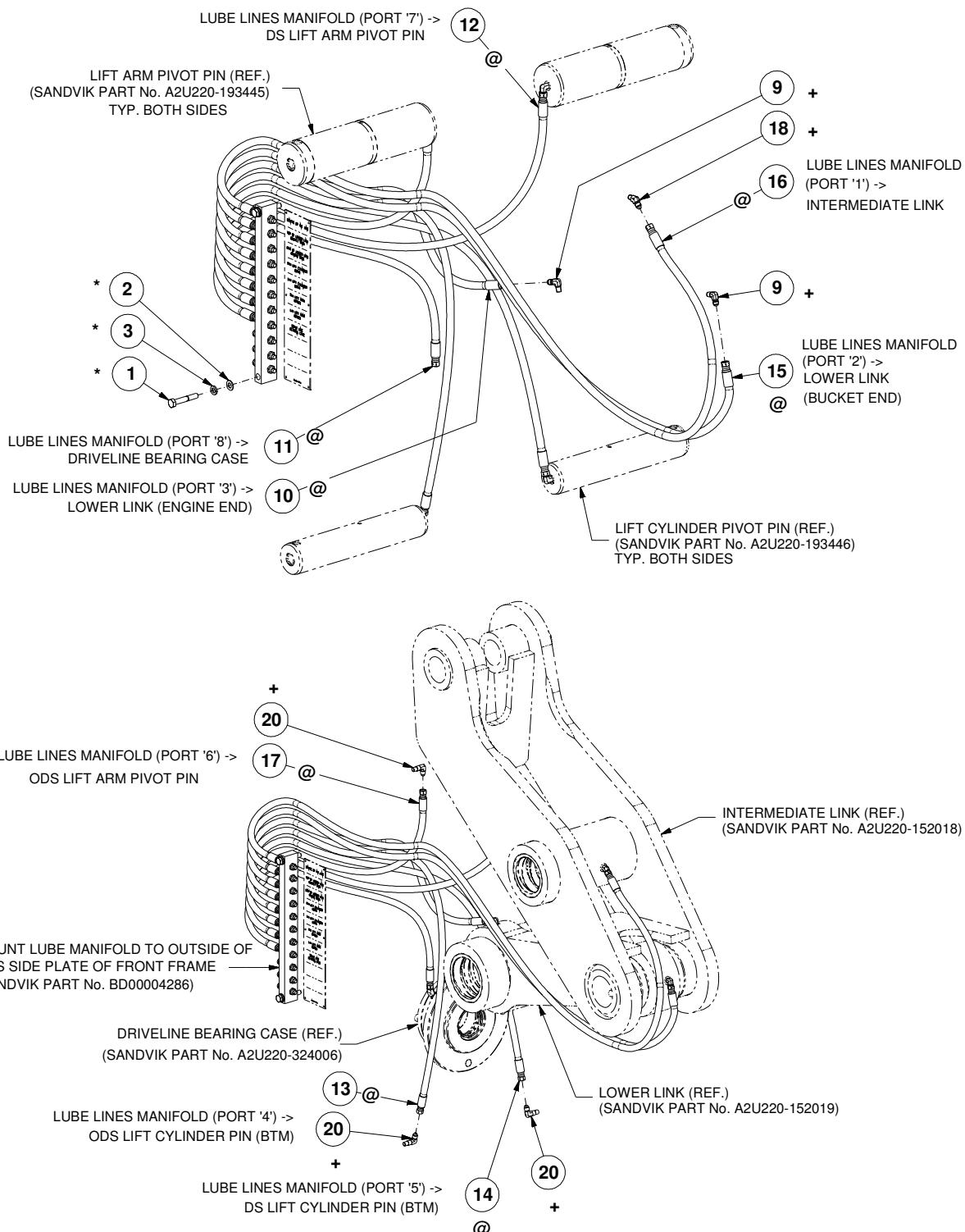
A2U220-140013

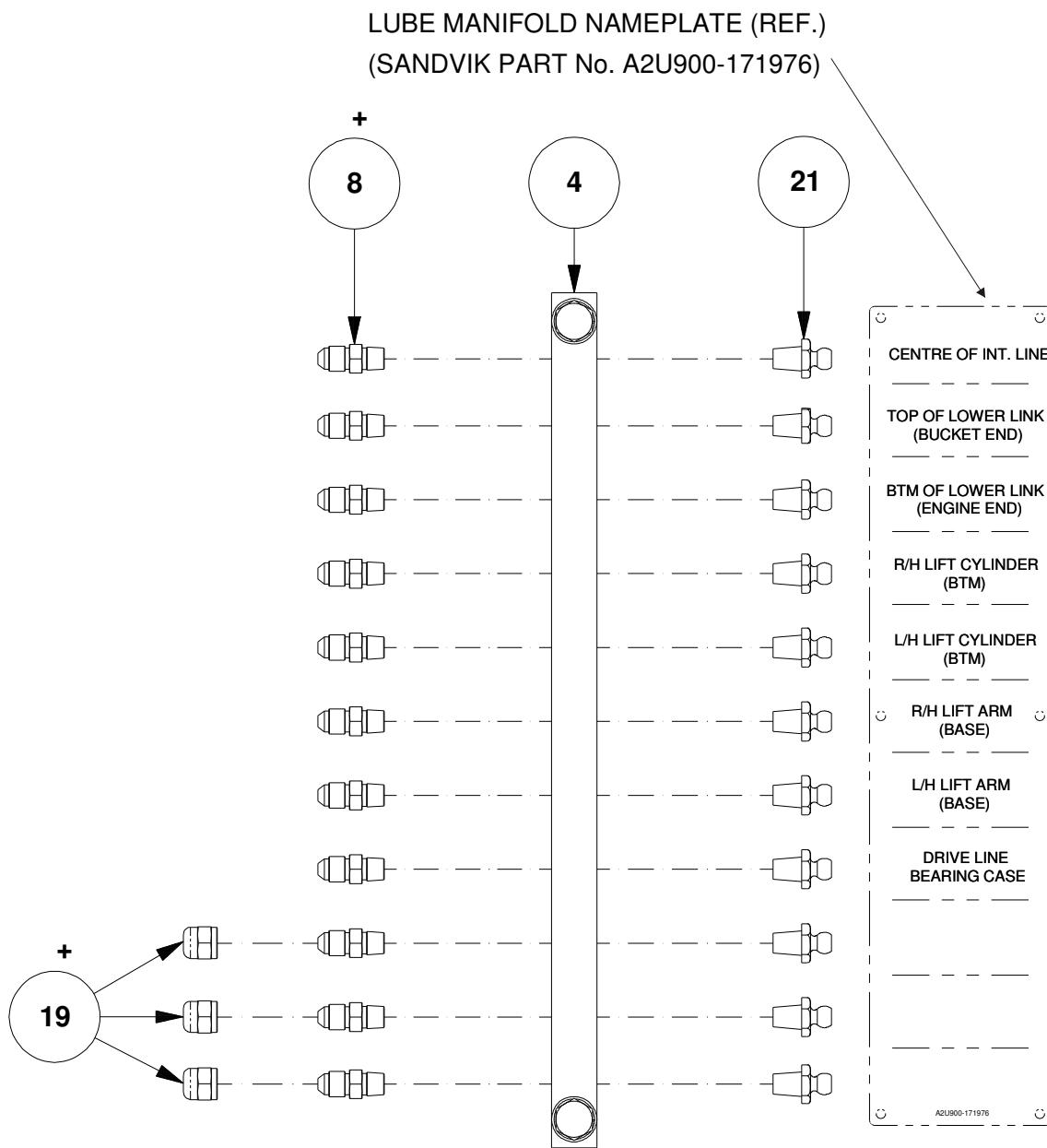
FENDER GROUP DS, LS191

04-04-10

REV. 2

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502842*	2		Bolt Hex Head, M12 x 25mm Long
2	445502849*	10		Bolt Hex Head, M12 x 50mm Long
3	450061619*	12		Washer, Flat, 12 mm
4	450081124*	12		Washer, Spring, 12 mm
5	455309036*	10		Hex Nut, M12 X 1.75
6	A2U220-141058	1		Rubber Mudflap
7	A2U220-141059	1		Clamp Strap
8	A2U220-141078	1		Fender Weldment - DS
9	A2U220-142010	1		Mud Flap - DS
10	A2U220-1911426	1		Clamp Strap
11	A2U220-1911427	1		Fender Extension - Drivers Side
*	BD00003757	1		Fastener Kit

**BD00008013**
**FRONT LUBE LINES GROUP LS191**
**04-04-11**
**REV. 0**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**BD00008013**
**FRONT LUBE LINES GROUP LS191**
**04-04-11**
**REV. 0**

**LUBE MANIFOLD ASSEMBLY**
**NOTES:**

1. LUBE MANIFOLD PORTS ARE  
NUMBERED FROM TOP DOWN

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**PARTS MANUAL****BD00008013****FRONT LUBE LINES GROUP LS191****04-04-11****REV. 0**

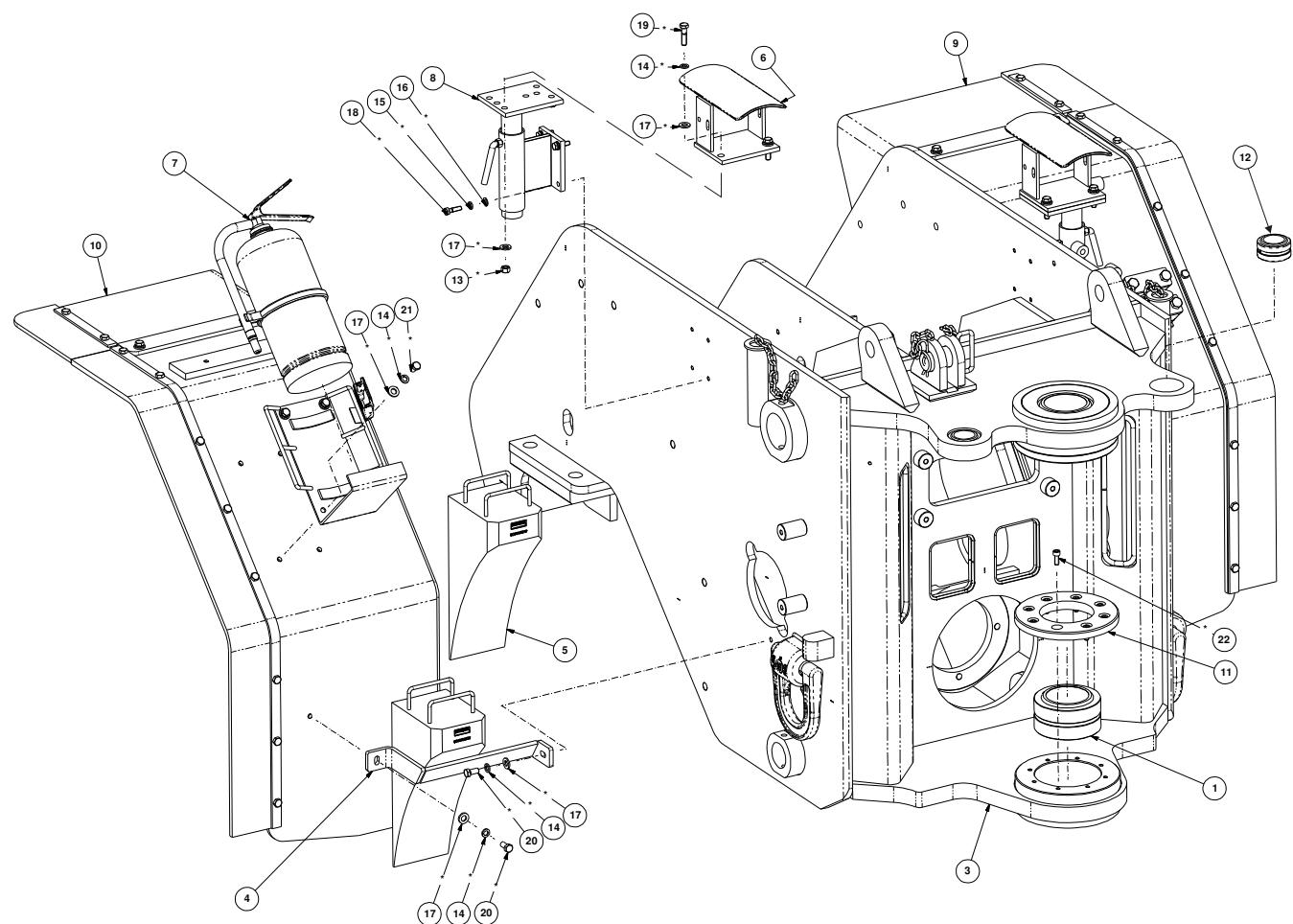
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402810	2		Bolt Hex Head, M10 x 60mm Long
2	450062508	2		Washer, Flat, 10 mm
3	450081022	2		Washer, Spring, 10 mm
4	A2U130-255220	1		LUBE MANIFOLD
+	BD00008023	1		Fitting Kit
*	BD00008024	1		Fastener Kit
@	BD00008038	1		Hose Kit
8	D15-0207	11		Nipple, 1/8" NPT x 7/16" JIC
9	D17-0207	2		Elbow 90, 1/8" NPT x 7/16" JIC M/M
10	D2900-04-100-07	1		Hose Assy, 7/16" JIC x 1/4" Hose
11	D2900-04-120-07	1		Hose Assy, 7/16" JIC x 1/4" Hose
12	D2900-04-130-07	1		Hose Assy, 7/16" JIC x 1/4" Hose
13	D2900-04-140-07	1		Hose Assy, 7/16" JIC x 1/4" Hose
14	D2900-04-150-07	1		Hose Assy, 7/16" JIC x 1/4" Hose
15	D2900-04-170-07	1		Hose Assy, 7/16" JIC x 1/4" Hose
16	D2900-04-230-07	1		Hose Assy, 7/16" JIC x 1/4" Hose
17	D2900-04-97-07	1		Hose Assy, 7/16" JIC x 1/4" Hose
18	D41-0207	1		Elbow 45, 1/8" NPT x 7/16" JIC
19	D8-07	3		CAP NUT, 7/16" JIC
20	DE17-0207	4		Elbow 90, 1/8" NPT EXTD x 7/16" JIC M/M
21	P1FG	11		GREASE NIPPLE 1/8"

**BD00015027**

**FRONT FRAME GROUP LS191/ 190**

**04-04-13**

**REV. 0**



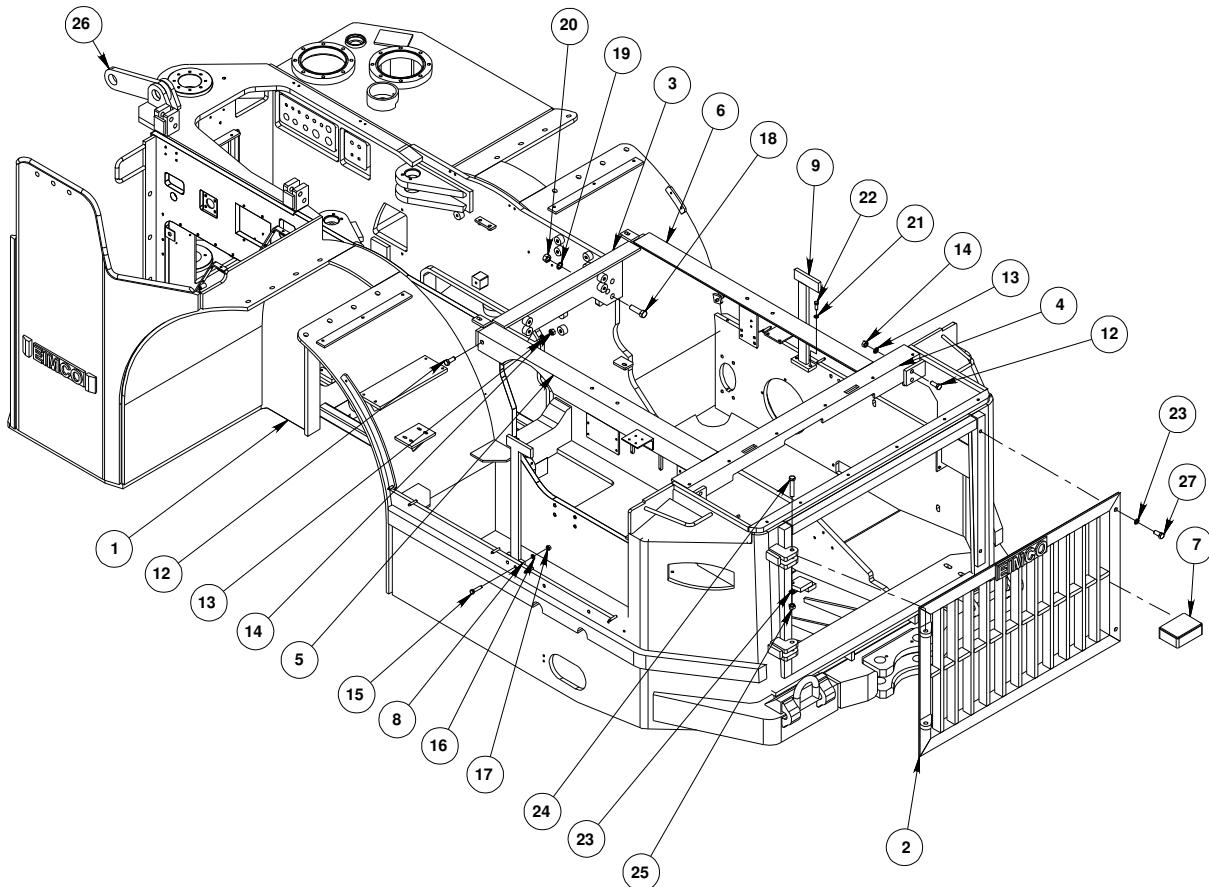
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    04-04-13**

**Sandvik Underground Mining Flameproof Equipment**

**BD00015027****FRONT FRAME GROUP LS191/ 190****04-04-13****REV. 0**

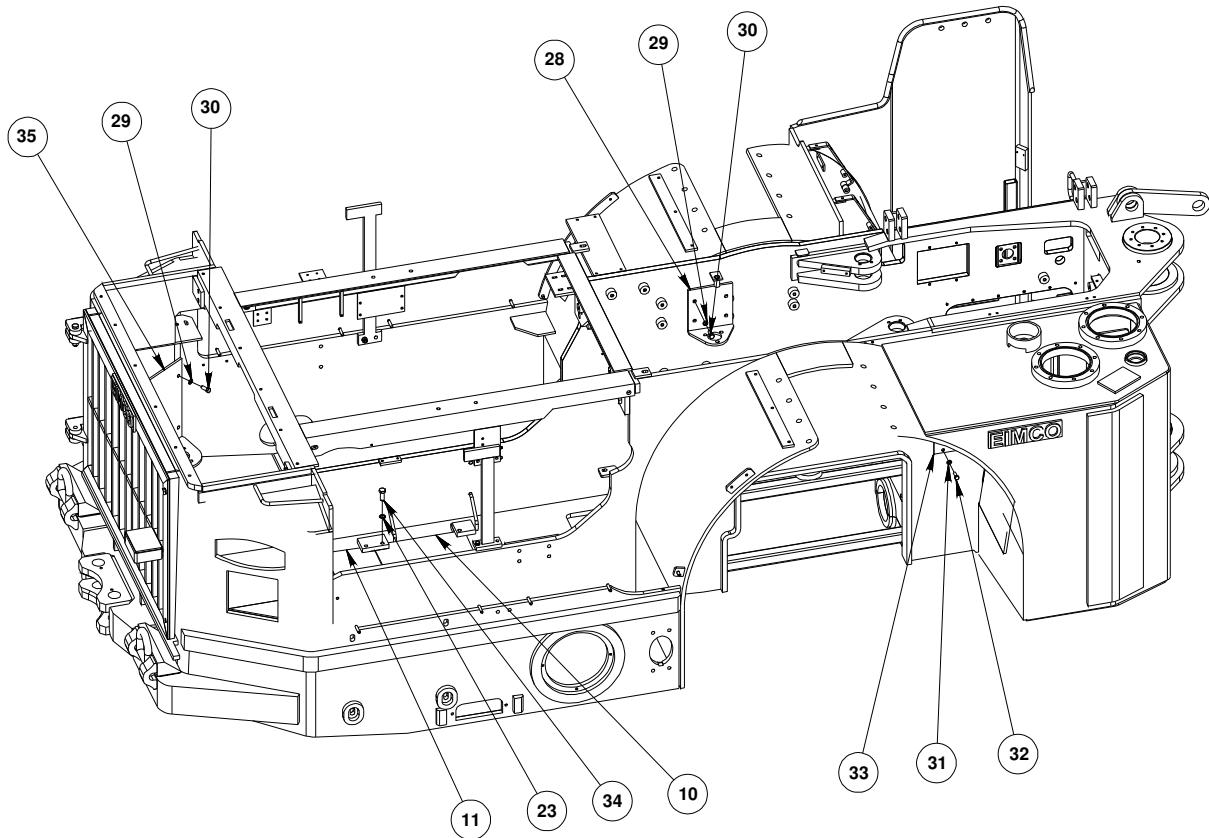
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	G903		2	Bearing, Spherical, 5" Bore
*	BD00011876		1	FASTENER KIT
3	BD00004286		1	Front Frame Weldment
4	BD00002709		1	Wheel Chock Bracket
5	BD00002276		2	Wheel Chock
6	A2U921-792032		2	BRACKET - LIGHT PROTECTOR
7	A2U900-486015	08-02	1	FIRE EXTINGUISHER
8	A2U900-191723		2	MOUNT POST ASSY
9	A2U220-140014	04-04-09	1	ODS Fender Group
10	A2U220-140013	04-04-10	1	Fender Assembly - DS
11	A2U220-117001		2	Retainer, Spherical Bearing
12	BD00026450		2	Bearing, Steering Cylinder
13	455309036*		2	Hex Nut, M12 X 1.75
14	450081124*		10	Washer, Spring, 12 mm
15	450081022*		8	Washer, Spring, 10 mm
16	450062508*		8	Washer, Flat, 10 mm
17	450061619*		11	Washer, Flat, 12 mm
18	445512804*		8	Bolt Hex Head, M10 x 35mm Long
19	445502848*		4	Bolt Hex Head, M12 x 45mm Long
20	445502842*		2	Bolt Hex Head, M12 x 25mm Long
21	445502840*		4	Bolt Hex Head, M12 x 20mm Long
22	445202801*		17	SHCS M10 X 25LG

**A2U220-190217****BODY PARTS GROUP****04-05****REV. 2**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-05**

Sandvik Underground Mining Flameproof Equipment

**A2U220-190217****BODY PARTS GROUP****04-05****REV. 2**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-05**

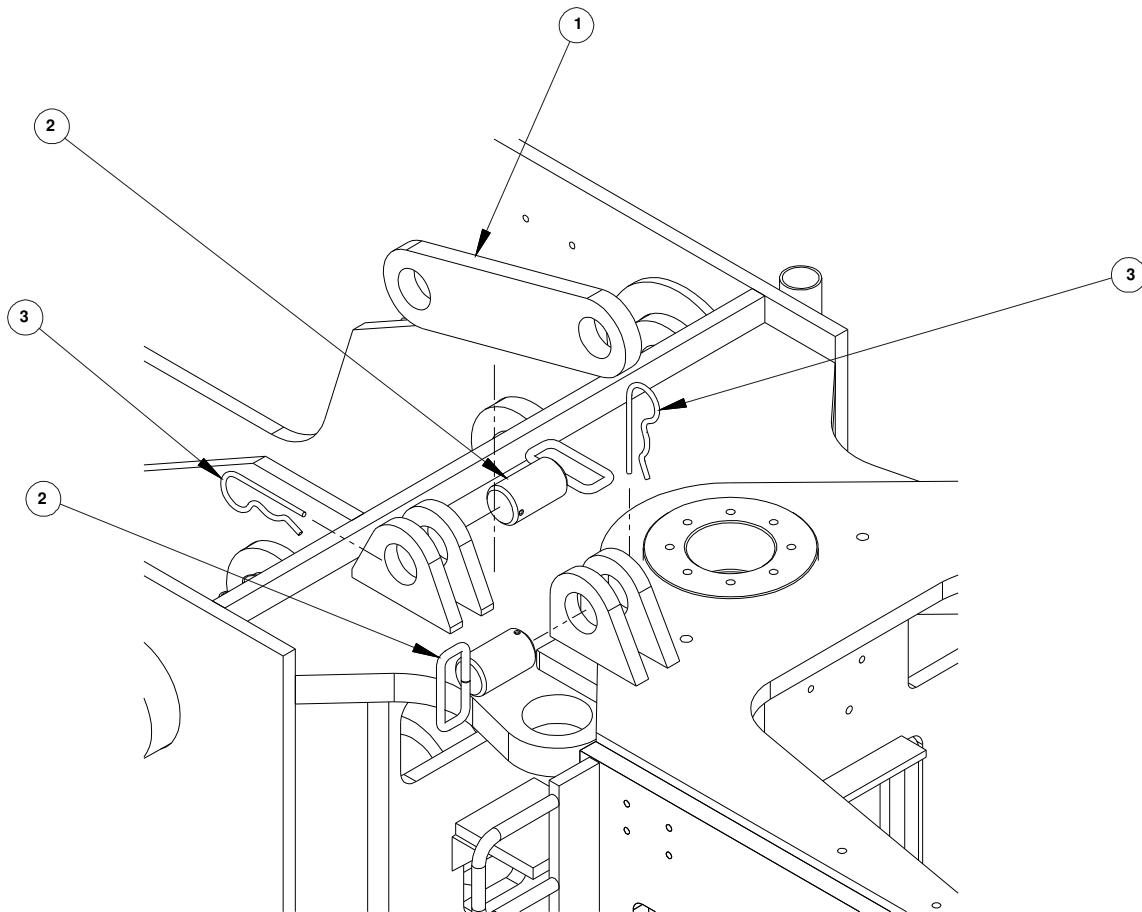
Sandvik Underground Mining Flameproof Equipment

**A2U220-190217**
**BODY PARTS GROUP**
**04-05**
**REV. 2**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	A2U220-111132		1	REAR FRAME, FINAL WELDMENT
2	A2U130-115021		1	RADIATOR GRILL
3	A2U220-1911017		1	BULKHEAD
4	A2U220-1911014		1	COVER SUPPORT, REAR
5	A2U220-1911015		1	SUPPORT, TOP COVERS, DRIVERS SIDE
6	A2U220-1911016		1	SUPPORT, TOP COVERS
7	A2U220-115023		1	RADIATOR STEP
8	A2U220-197748		1	SUPPORT, LHS TOP COVERS
9	A2U220-1911056		1	SUPPORT, RHS, TOP COVERS
10	A2U220-197655		1	BELLY PLATE - STRAIGHT
11	A2U220-197656		1	BELLY PLATE - BENT
12	445502937		4	BOLT, HEX HD M16 x 40 LG
13	450081130		4	WASHER, SPRING M16
14	455302040		4	NUT, HEX M16
15	445502848		2	BOLT, HEX HD M12 x 45 LG
16	450081124		2	WASHER, SPRING M12
17	455302036		2	NUT M12
18	445405075		4	BOLT, HEX HD M12 x 70 LG
19	450081034		4	WASHER, SPRING M20
20	455300044		4	NUT, HEX M20
21	450081022		2	WASHER, SPRING M10
22	445502802		2	BOLT, HEX HD M10 x 30 LG
23	450081130		10	WASHER, SPRING M16
24	445402950		2	BOLT, HEX HD M16 x 110 LG
25	455309040		2	NUT, HEX M16
26	A2U220-190230	04-05-02	1	LINK, SAFETY
27	445502935		2	BOLT, HEX HD M16 x 35 LG
28	A2U913-591257		1	BRACKET, BRAKE ACCUMULATOR
29	5450081124		4	WASHER, SPRING M12
30	445502843		4	BOLT, HEX HD M12 x 30 LG

**A2U220-190217****BODY PARTS GROUP****04-05****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
31	450081022	3	1	WASHER, SPRING M10
32	445502802	3	1	BOLT, HEX HD M10 x 30 LG
33	A2U130-197310	1	1	COVER, TRANSMISSION
34	445402963	8	1	BOLT, HEX HD M16 x 30 LG
35	A2U913-591256	1	1	BRACKET, STEER ACCUMULATOR

**A2U220-190230****SAFETY LINK GROUP****04-05-02****REV. 1**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-05-02**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

A2U220-190230

SAFETY LINK GROUP

04-05-02

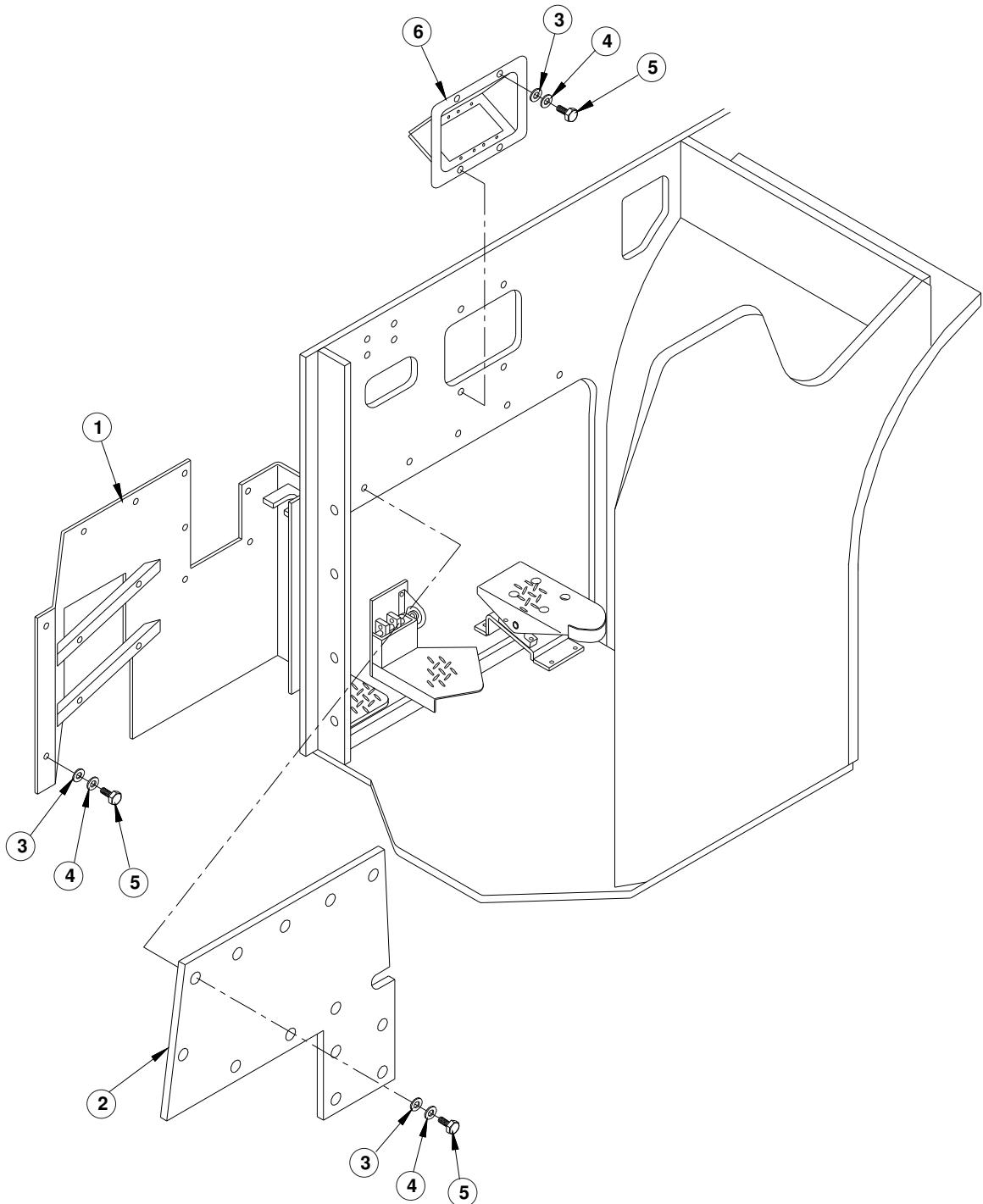
REV. 1

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	244526	1	1	LINK, SAFETY
2	A2U130-193421	2	2	PIN, SAFETY LINK
3	A2U913-198001	2	2	R-CLIP, B12

**A2U220-400018**  
**REV. 1**

**OPERATORS COMPARTMENT  
GROUP ED10 LHD**

**04-06**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-06**

**Sandvik Underground Mining Flameproof Equipment**

**OPERATORS COMPARTMENT  
GROUP ED10 LHD**

04-06

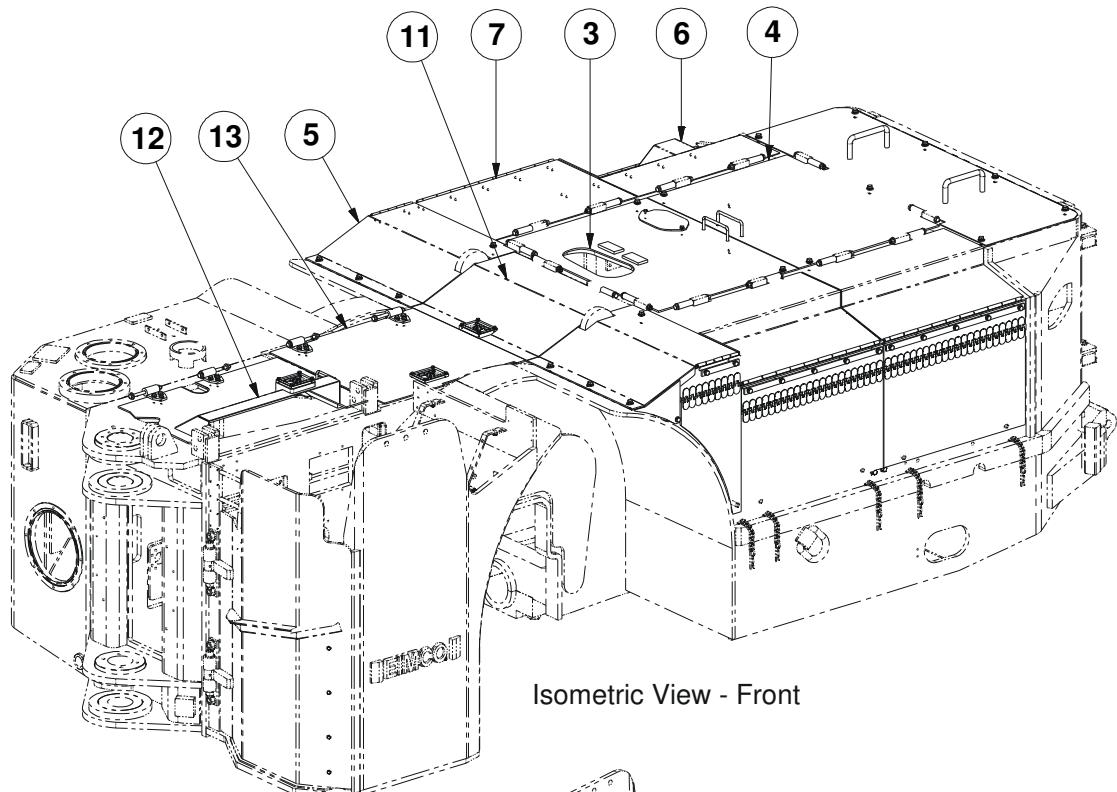
**A2U220-400018****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-491238	1		OPERATORS KICKPLATE
2	A2U130-491222	1		PROTECTOR SHEET RUBBER
3	A2U900-392104	27		WASHER, FLAT
4	A2U900-392100	27		WASHER, SPRING
5	A2U900-392099	27		CAPSCREW
6	A2U220-591346	1		MOUNT, BRACKET BUCKET CONT.

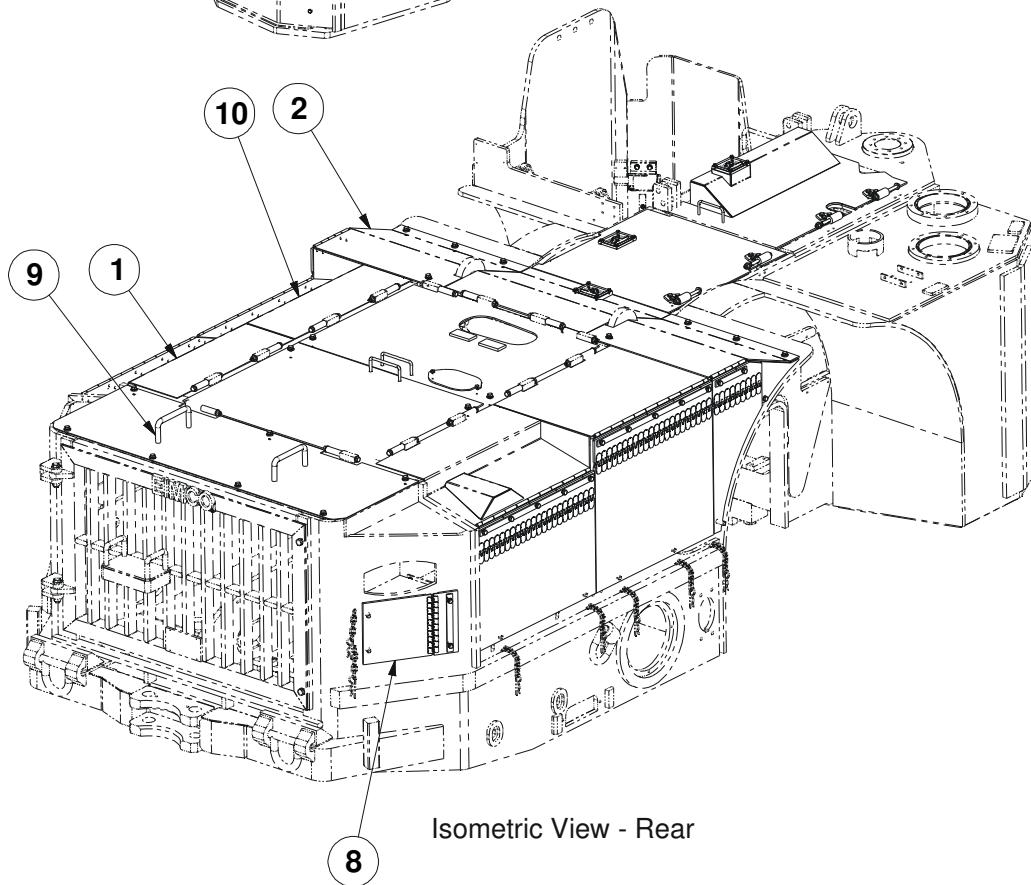
**A2U220-190220**  
**REV. 6**

**COVERS ASSEMBLY GROUP -  
LS190 STD/ NAUT**

**04-07**



Isometric View - Front



Isometric View - Rear

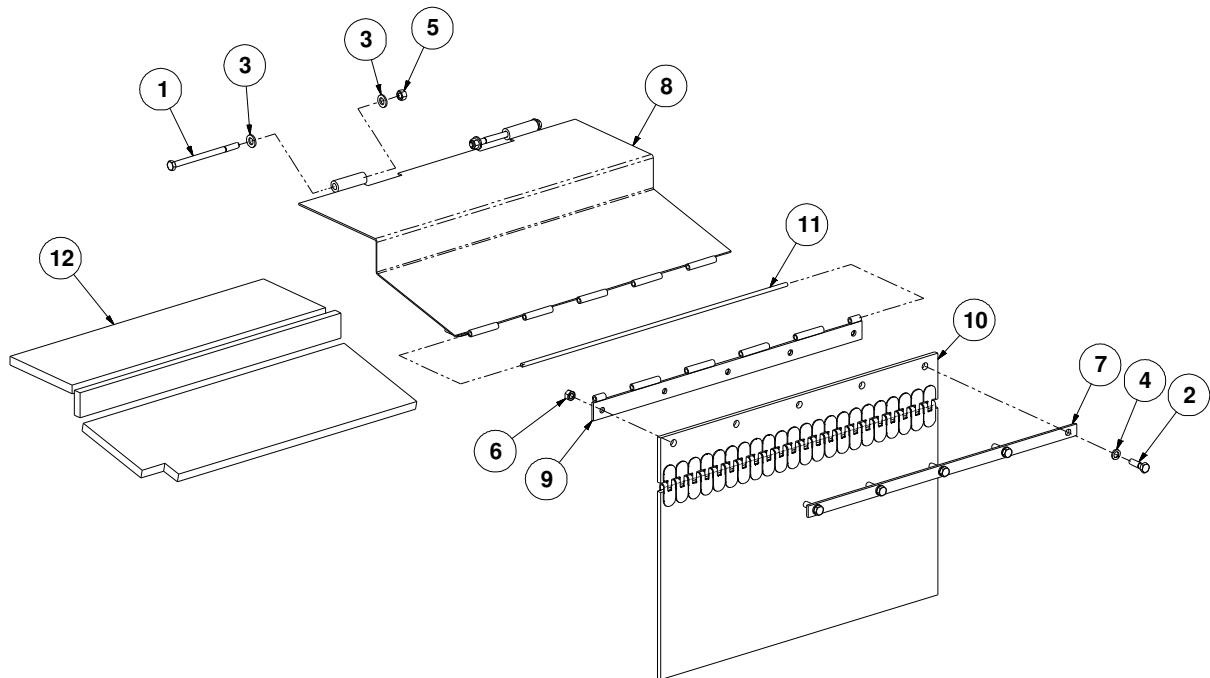
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-07**

**Sandvik Underground Mining Flameproof Equipment**

**PARTS MANUAL****A2U220-190220****COVERS ASSEMBLY GROUP -  
LS190 STD/ NAUT****04-07****REV. 6**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-197957	04-07-01	1	Cover - Air Receiver
2	A2U220-197962	04-07-02	1	Cover - Alternator
3	A2U220-197958	04-07-03	1	Cover - Engine, Front
4	A2U220-197955	04-07-04	1	Cover - Engine, Rear
5	A2U220-197963	04-07-05	1	Cover - Exhaust Area
6	A2U220-197956	04-07-06	1	Cover - Fuel Tank
7	A2U220-197959	04-07-07	1	Cover - Make Up Tank
8	A2U130-1971122	04-07-15	1	Cover - Pto Valves
9	A2U220-197954	04-07-08	1	Cover - Radiator
10	A2U220-197960	04-07-09	1	Cover - Scrubber
11	A2U220-197961	04-07-10	1	Cover - Torque Converter
12	A2U220-197964	04-07-11	1	Cover - Trans, Front, Nautitech Option
13	A2U220-197965	04-07-12	1	Cover - Transmission, Rear

**A2U220-197957****COVER, AIR RECEIVER****04-07-01****REV. 0****Cover - Air Receiver Assembly**

(Exploded View)

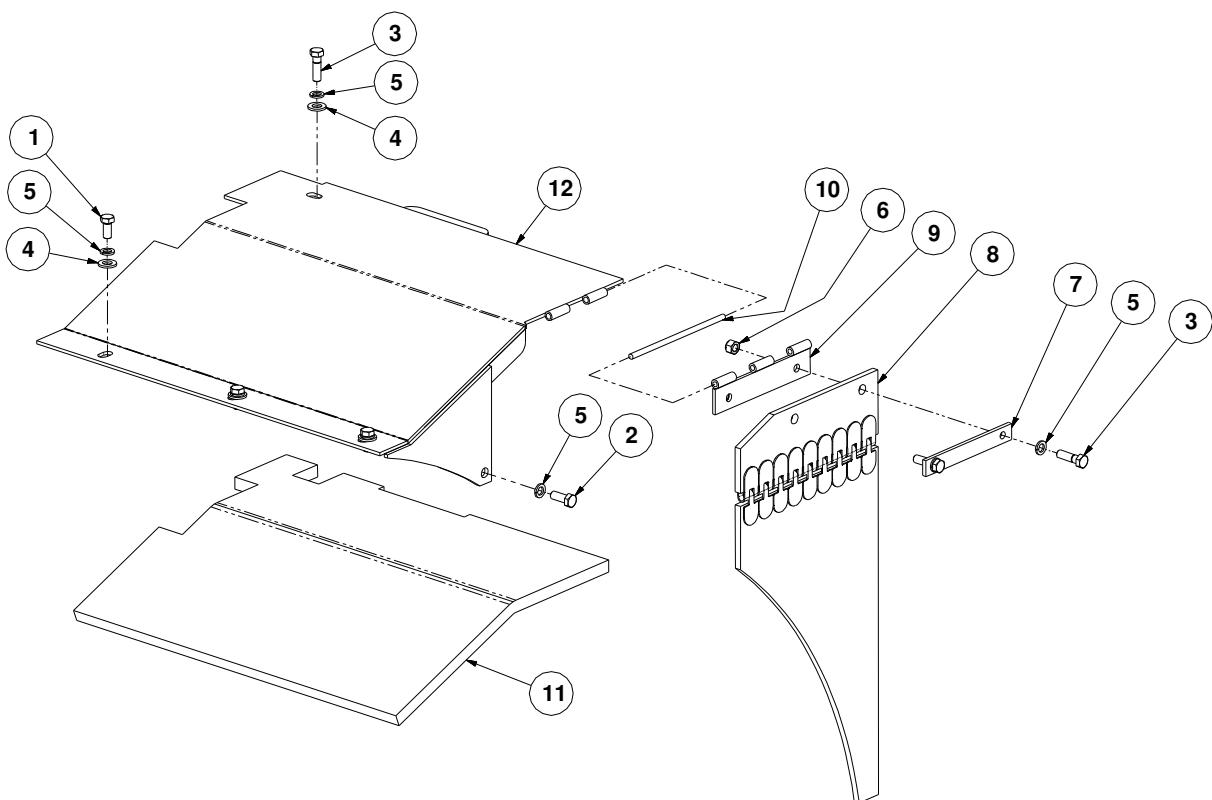
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-07-01**

Sandvik Underground Mining Flameproof Equipment

**A2U220-197957****COVER, AIR RECEIVER****04-07-01****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402866	2		Bolt Hex Head M12 x 170mm Long
2	445502847	5		Bolt Hex Head M12 x 40mm Long
3	450061619	4		Washer, Flat 12 mm
4	450081124	5		Washer, Spring 12 mm
5	455309036	2		Hex Nut M12 X 1.75
6	455669036	5		Hex Nyloc Nut M12 X 1.75
7	A2U220-1911029	1		Cover Clamp 705 LG
8	A2U220-197768	1		Cover, Lhs Rear
9	A2U220-197771	1		Hinge 705 mm LG
10	A2U220-197774	1		Rubber Cover
11	A2U220-197778	1		Rod, Hinge 695 mm LG
12	A2U220-197781	1		Sound Insulation - Air Receiver

**A2U220-197962  
REV. 0****COVER, ALTERNATOR****04-07-02**

Cover Assembly - Alternator  
(Exploded View)

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    04-07-02**

Sandvik Underground Mining Flameproof Equipment

**A2U220-197962****COVER, ALTERNATOR****04-07-02****REV. 0**

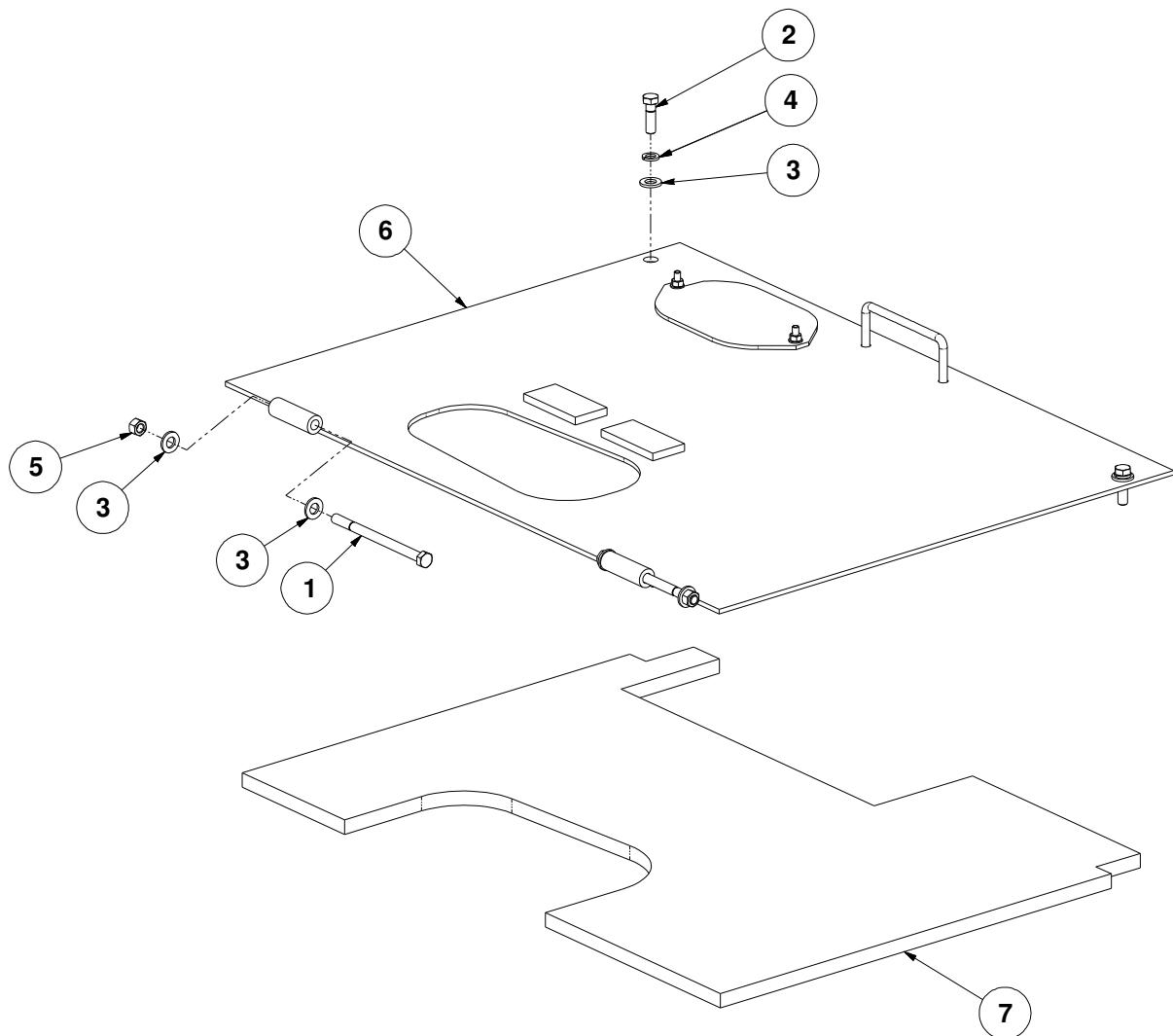
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502842		3	Bolt Hex Head M12 x 25mm Long
2	445502843		1	Bolt Hex Head M12 x 30mm Long
3	445502847		3	Bolt Hex Head M12 x 40mm Long
4	450061619		4	Washer, Flat 12 mm
5	450081124		7	Washer, Spring 12 mm
6	455669036		2	Hex Nyloc Nut M12 X 1.75
7	A2U220-1911098		1	Clamp Bar
8	A2U220-197776		1	Front Rubber Cover
9	A2U220-197777		1	Hinge 210 mm LG
10	A2U220-197779		1	Rod, Hinge 205 mm LG
11	A2U220-197865		1	Sound Insulation 19 Thk x 485 x 620
12	A2U220-197919		1	Cover - Alternator

A2U220-197958

**COVER ASSEMBLY, ENGINE, FRONT**

04-07-03

REV. 0



**Cover Assembly - Engine, Front**  
(Exploded View)

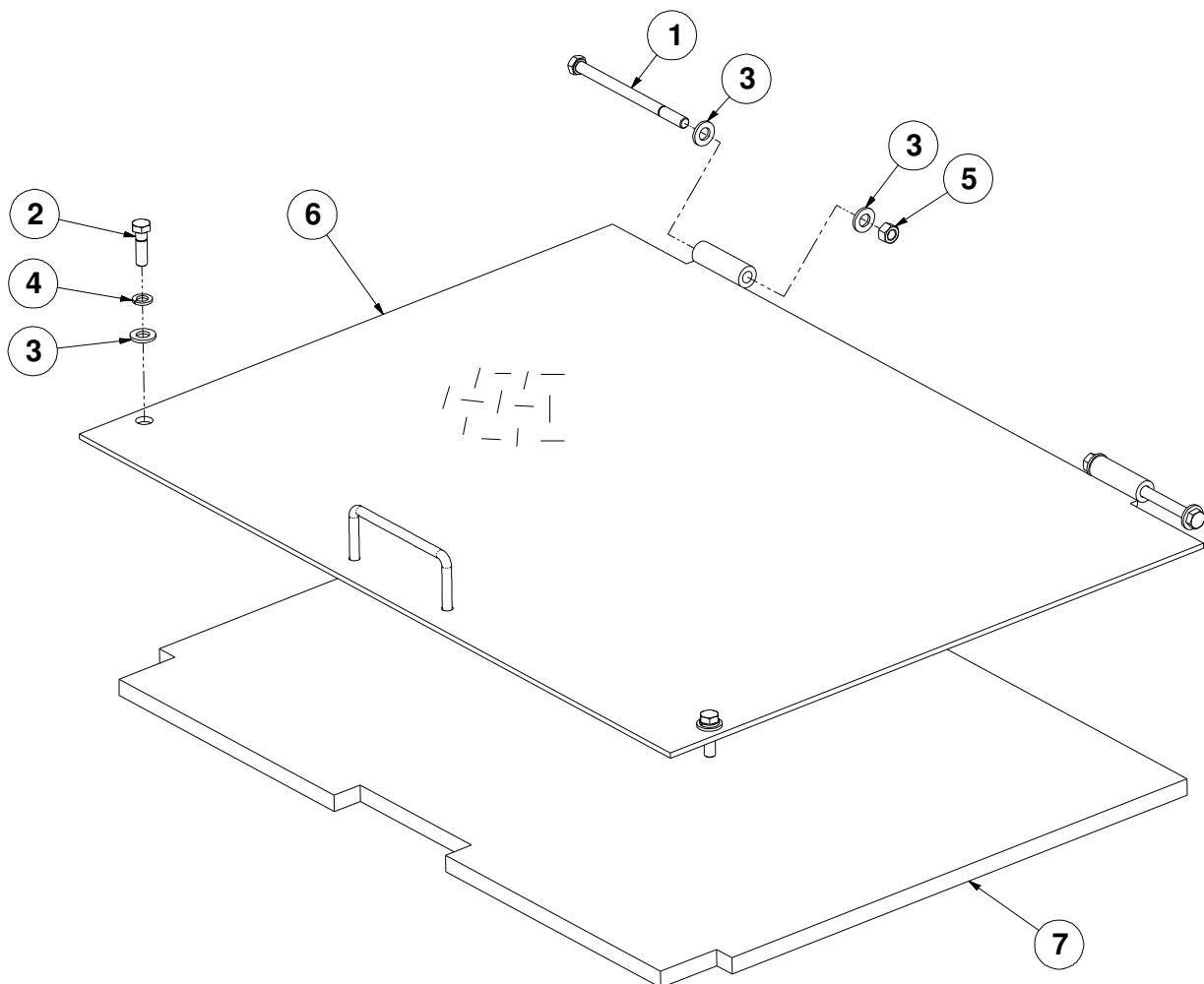
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    04-07-03**

Sandvik Underground Mining Flameproof Equipment

**A2U220-197958****COVER ASSEMBLY, ENGINE, FRONT****04-07-03****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402866	2		Bolt Hex Head M12 x 170mm Long
2	445502847	2		Bolt Hex Head M12 x 40mm Long
3	450061619	6		Washer, Flat 12 mm
4	450081124	2		Washer, Spring 12 mm
5	455309036	2		Hex Nut M12 X 1.75
6	A2U130-197716	1		Front, Engine Cover
7	A2U220-197866	1		Sound Insulation 19 Thk x 626 x 926

**A2U220-197955****COVER ASSEMBLY, ENGINE - REAR****04-07-04****REV. 0**

**Cover Assembly - Engine, Rear**  
(Exploded View)

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-07-04**

Sandvik Underground Mining Flameproof Equipment

**A2U220-197955****COVER ASSEMBLY, ENGINE - REAR****04-07-04****REV. 0**

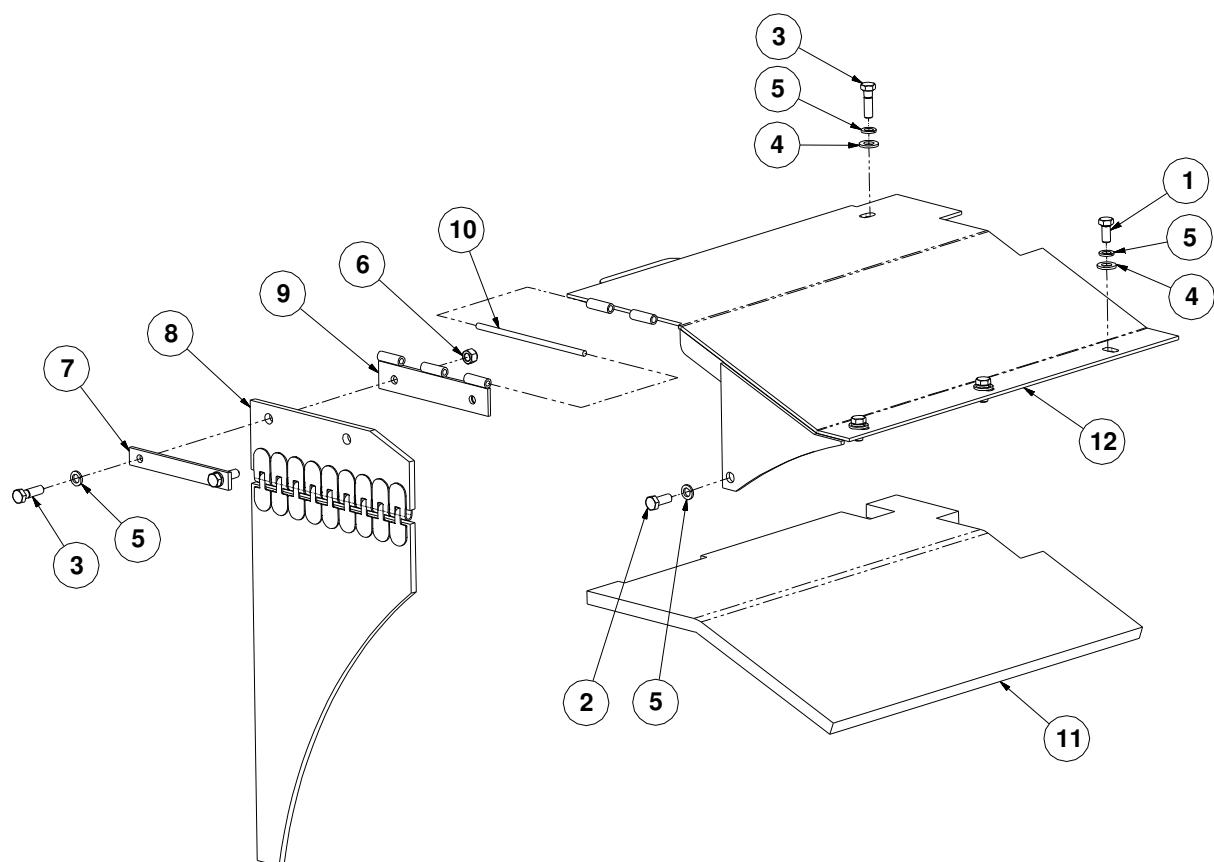
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402866	2		Bolt Hex Head M12 x 170mm Long
2	445502847	2		Bolt Hex Head M12 x 40mm Long
3	450061619	6		Washer, Flat 12 mm
4	450081124	2		Washer, Spring 12 mm
5	455309036	2		Hex Nut M12 X 1.75
6	A2U220-197860	1		Cover - Engine, Rear
7	A2U220-197867	1		Sound Insulation 19 Thk x 686 x 926

A2U220-197963

**COVER ASSEMBLY, EXHAUST AREA**

04-07-05

REV. 0



Cover Assembly - Exhaust Area  
(Exploded View)

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

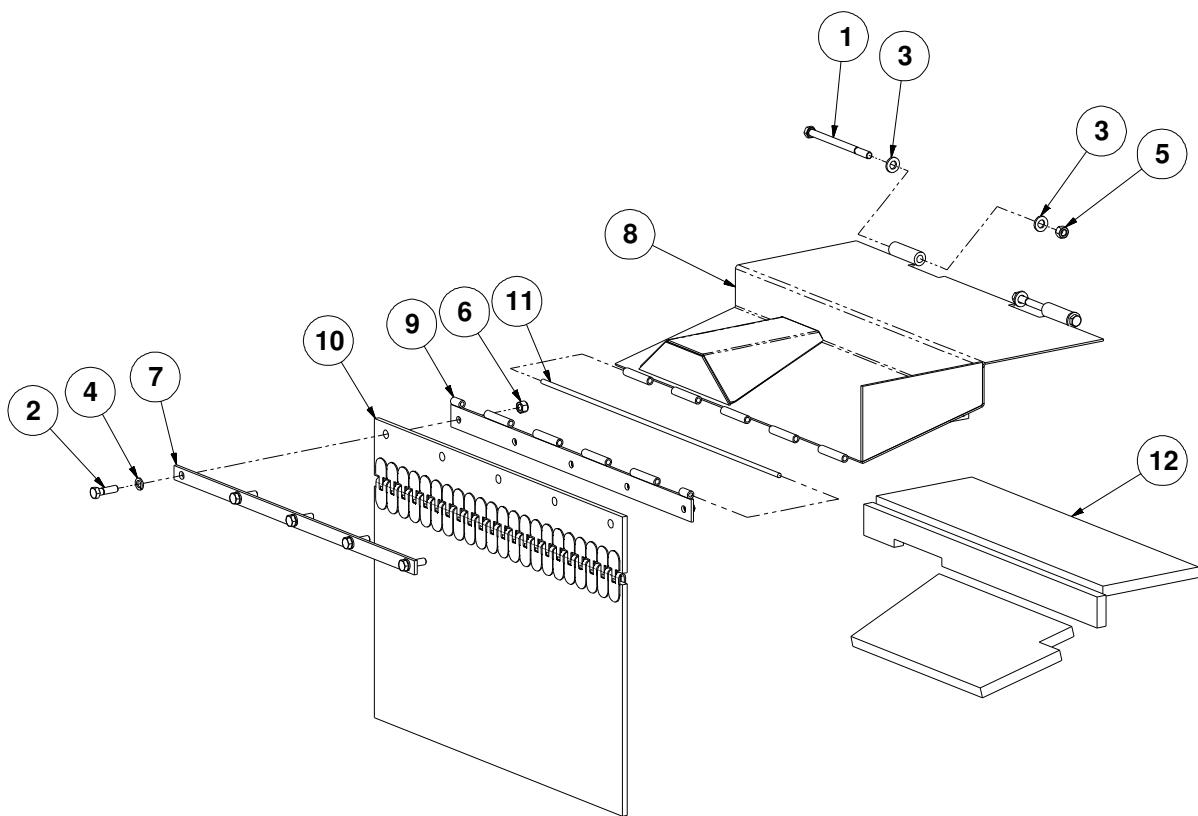
**SECTION    04-07-05**

Sandvik Underground Mining Flameproof Equipment

**A2U220-197963****COVER ASSEMBLY, EXHAUST AREA****04-07-05****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502842	3		Bolt Hex Head M12 x 25mm Long
2	445502843	1		Bolt Hex Head M12 x 30mm Long
3	445502847	3		Bolt Hex Head M12 x 40mm Long
4	450061619	4		Washer, Flat 12 mm
5	450081124	7		Washer, Spring 12 mm
6	455669036	2		Hex Nyloc Nut M12 X 1.75
7	A2U220-1911098	1		Clamp Bar
8	A2U220-197776	1		Front Rubber Cover
9	A2U220-197777	1		Hinge 210 mm LG
10	A2U220-197779	1		Rod, Hinge 205 mm LG
11	A2U220-197864	1		Sound Insulation 19 Thk x 486 x 620
12	A2U220-197918	1		Cover - Exhaust Area

**A2U220-197956**  
**REV. 0**

**COVER ASSEMBLY, FUEL TANK****04-07-06**

**Cover Assembly - Fuel Tank**  
(Exploded View)

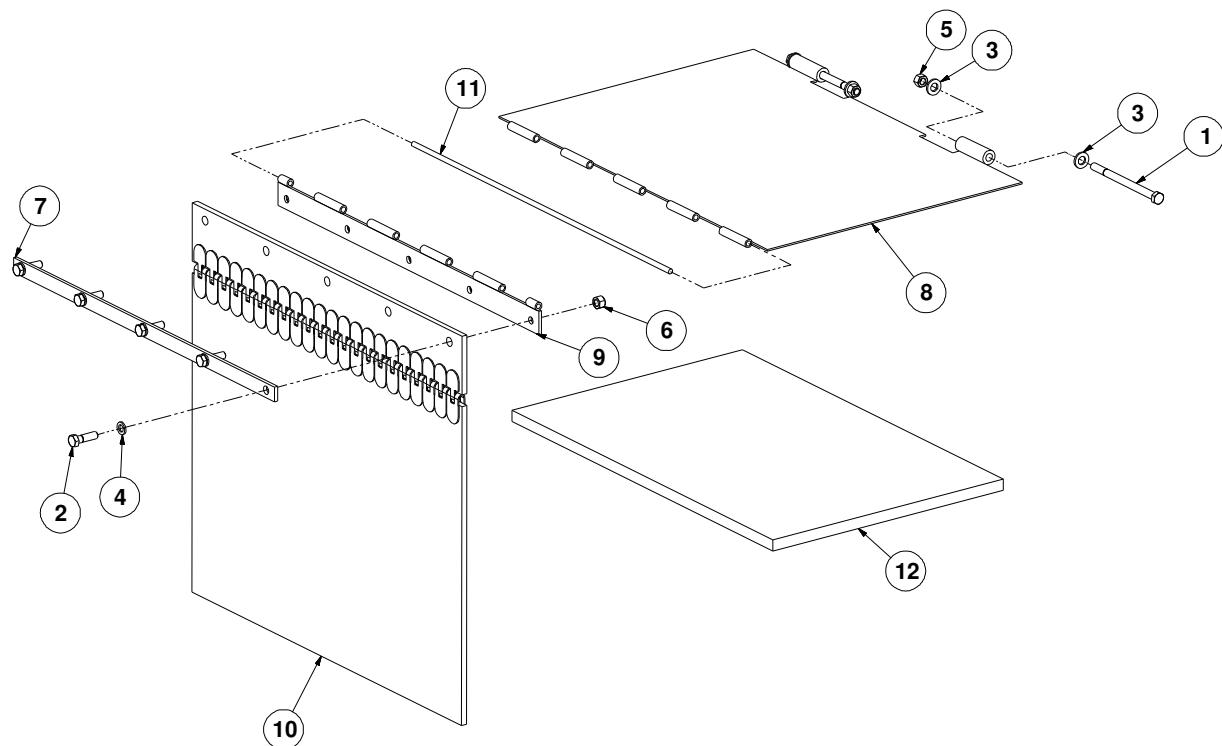
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    04-07-06**

**Sandvik Underground Mining Flameproof Equipment**

**A2U220-197956****COVER ASSEMBLY, FUEL TANK****04-07-06****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402866	2		Bolt Hex Head M12 x 170mm Long
2	445502847	5		Bolt Hex Head M12 x 40mm Long
3	450061619	4		Washer, Flat 12 mm
4	450081124	5		Washer, Spring 12 mm
5	455309036	2		Hex Nut M12 X 1.75
6	455669036	5		Hex Nyloc Nut M12 X 1.75
7	A2U220-1911029	1		Cover Clamp 705 LG
8	A2U220-197770	1		Cover - Fuel Tank
9	A2U220-197771	1		Hinge 705 mm LG
10	A2U220-197774	1		Rubber Cover
11	A2U220-197778	1		Rod, Hinge 695 mm LG
12	A2U220-197783	1		Rhs Rear Insulation

**A2U220-197959****COVER ASSEMBLY, MAKE UP TANK****04-07-07****REV. 0**

Cover Assembly - Make up Tank  
(Exploded View)

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    04-07-07**

Sandvik Underground Mining Flameproof Equipment

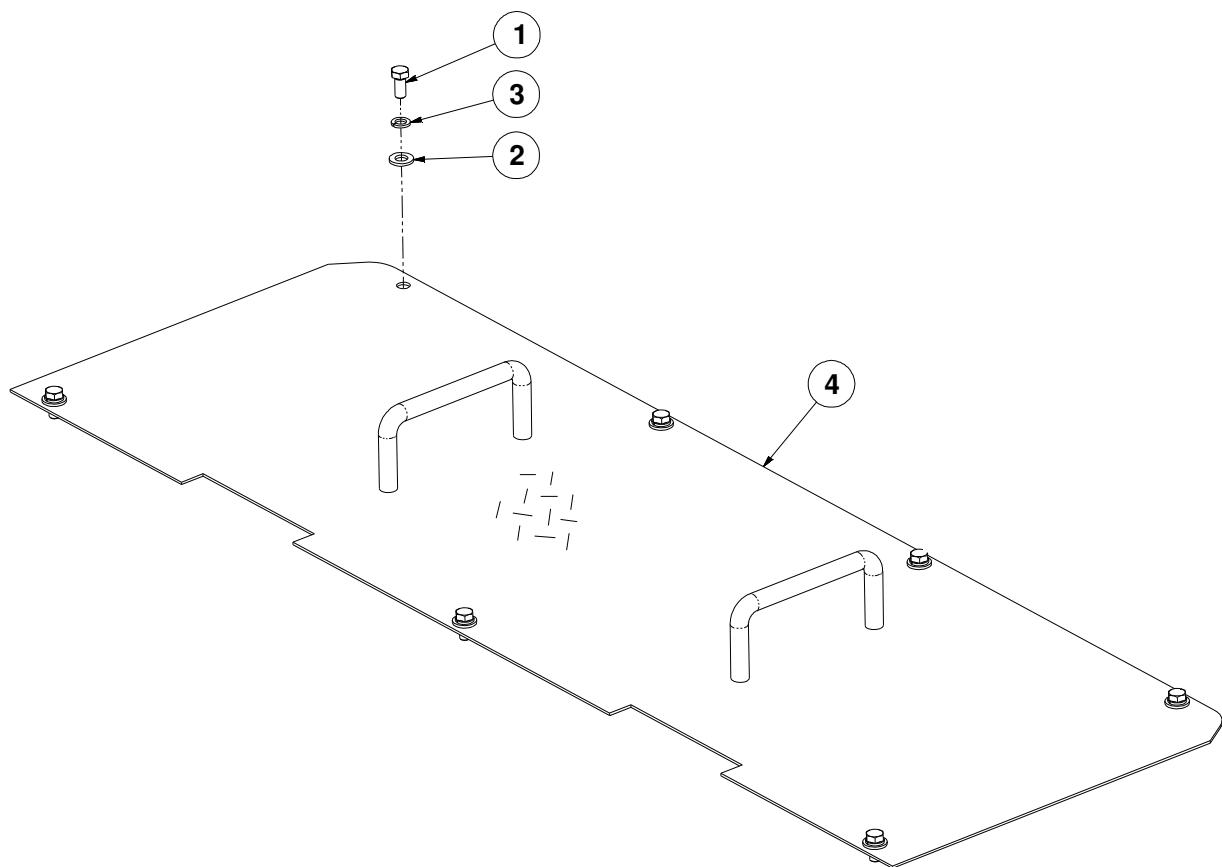
**A2U220-197959****COVER ASSEMBLY, MAKE UP TANK****04-07-07****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402866	2		Bolt Hex Head M12 x 170mm Long
2	445502847	5		Bolt Hex Head M12 x 40mm Long
3	450061619	4		Washer, Flat 12 mm
4	450081124	5		Washer, Spring 12 mm
5	455309036	2		Hex Nut M12 X 1.75
6	455669036	5		Hex Nyloc Nut M12 X 1.75
7	A2U220-1911029	1		Cover Clamp 705 LG
8	A2U220-197769	1		Cover - Makeup Tank
9	A2U220-197771	1		Hinge 705 mm LG
10	A2U220-197775	1		Rhs Middle Rubber Cover
11	A2U220-197778	1		Rod, Hinge 695 mm LG
12	A2U220-197782	1		Sound Insulation 19 Thk x 455 x 705

**A2U220-197954**  
**REV. 0**

**COVER ASSEMBLY, RADIATOR**

**04-07-08**



**Cover Assembly - Radiator**  
(Exploded View)

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

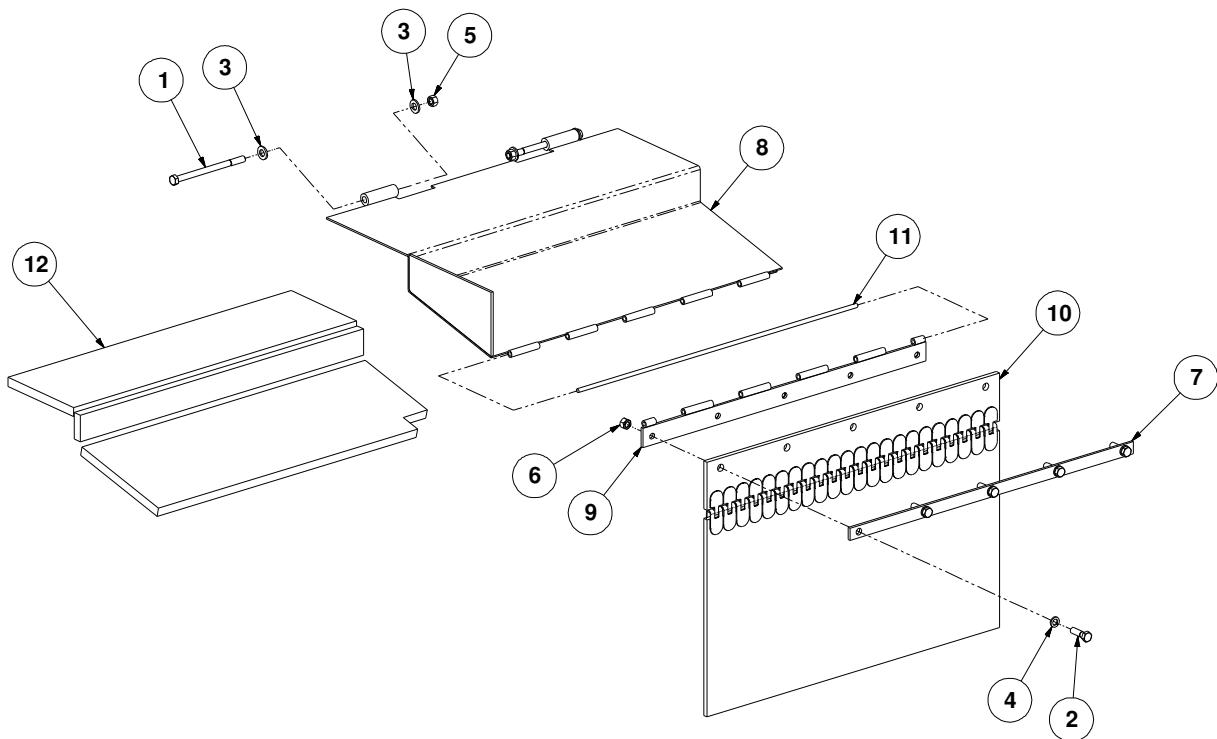
**SECTION    04-07-08**

**Sandvik Underground Mining Flameproof Equipment**

**A2U220-197954****COVER ASSEMBLY, RADIATOR****04-07-08****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502842	7		Bolt Hex Head M12 x 25mm Long
2	450061619	7		Washer, Flat 12 mm
3	450081124	7		Washer, Spring 12 mm
4	A2U220-197858	1		Cover - Radiator

**A2U220-197960**  
**REV. 0**

**COVER ASSEMBLY, SCRUBBER****04-07-09**

**Cover Assembly - Scrubber**  
(Exploded View)

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    04-07-09**

**Sandvik Underground Mining Flameproof Equipment**

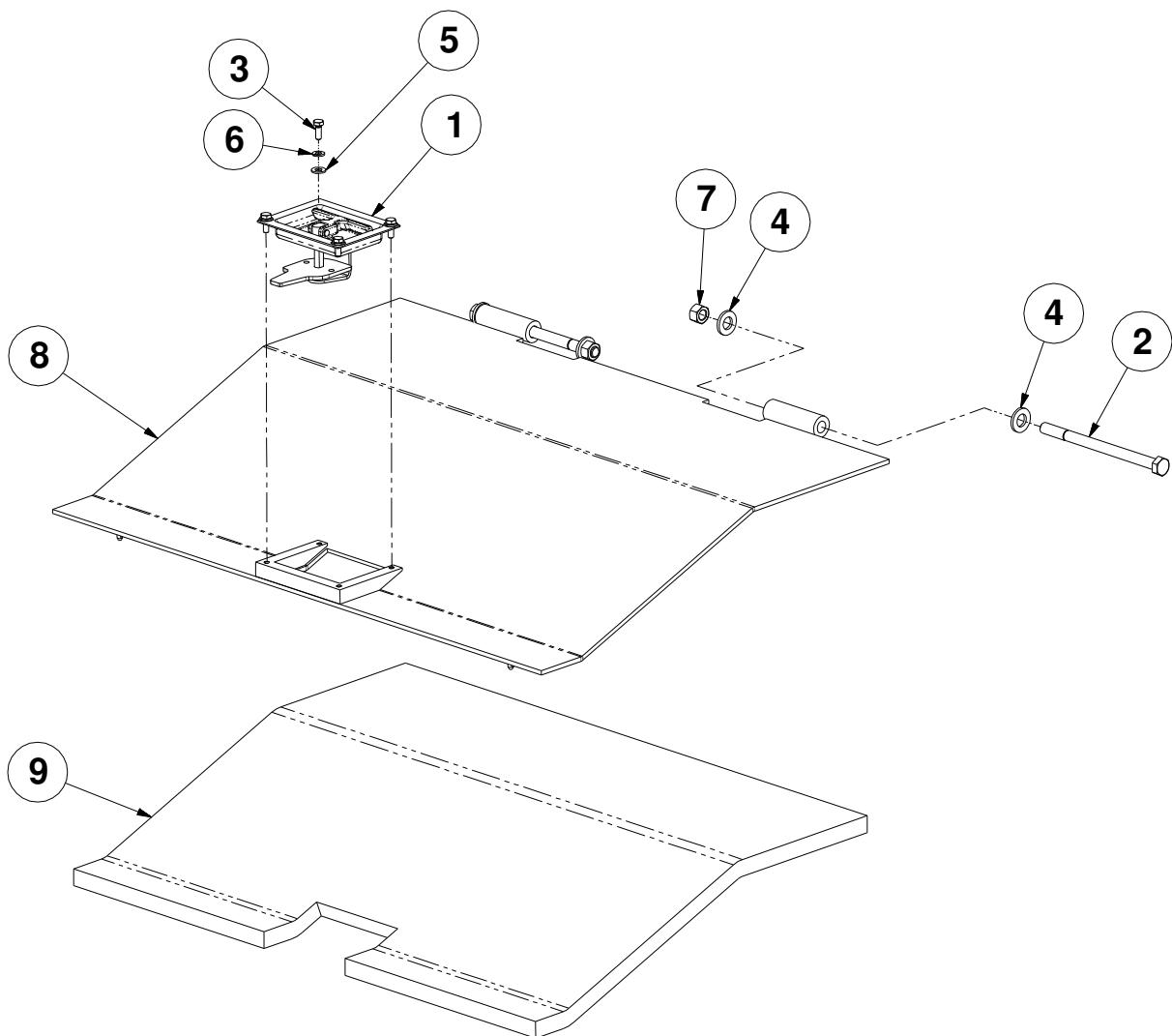
**A2U220-197960****COVER ASSEMBLY, SCRUBBER****04-07-09****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402866	2		Bolt Hex Head M12 x 170mm Long
2	445502847	5		Bolt Hex Head M12 x 40mm Long
3	450061619	4		Washer, Flat 12 mm
4	450081124	5		Washer, Spring 12 mm
5	455309036	2		Hex Nut M12 X 1.75
6	455669036	5		Hex Nyloc Nut M12 X 1.75
7	A2U220-1911029	1		Cover Clamp 705 LG
8	A2U220-197767	1		Cover, Lhs Front
9	A2U220-197771	1		Hinge 705 mm LG
10	A2U220-197774	1		Rubber Cover
11	A2U220-197778	1		Rod, Hinge 695 mm LG
12	A2U220-197780	1		Lhs Middle Insulation

**A2U220-197961**  
**REV. 0**

**COVER, TORQUE CONVERTER**

**04-07-10**



**Covers Assembly - Converter**  
(Exploded View)

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    04-07-10**

**Sandvik Underground Mining Flameproof Equipment**

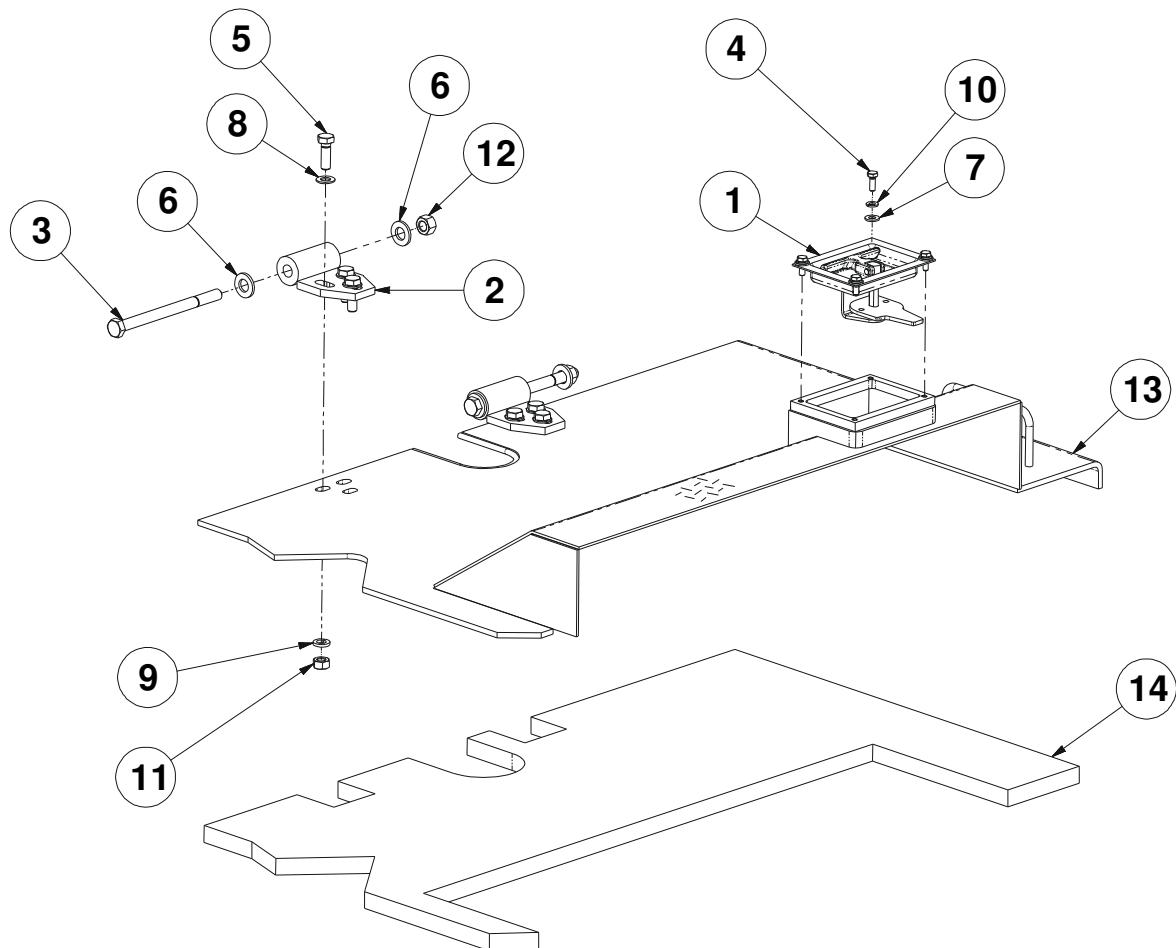
**A2U220-197961****COVER, TORQUE CONVERTER****04-07-10****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	114962		1	Handle-Recessed Lock
2	445402866		2	Bolt Hex Head M12 x 170mm Long
3	445502656		4	Bolt Hex Head M6 x 16mm Long
4	450061619		4	Washer, Flat 12 mm
5	450062504		4	Washer, Flat 6 mm
6	450081116		4	Washer, Spring 6 mm
7	455309036		2	Hex Nut M12 X 1.75
8	A2U220-197643		1	Cover - Torque Converter
9	A2U220-197664		1	Sound Insulation 19 Thk x 552 x 685

**A2U220-197964**  
**REV. 2**

**COVER, TRANS. FRONT, STD. &  
NAUTITEC**

**04-07-11**



**Cover Assembly - Trans, Front, Standard & Nautitech Option**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    04-07-11**

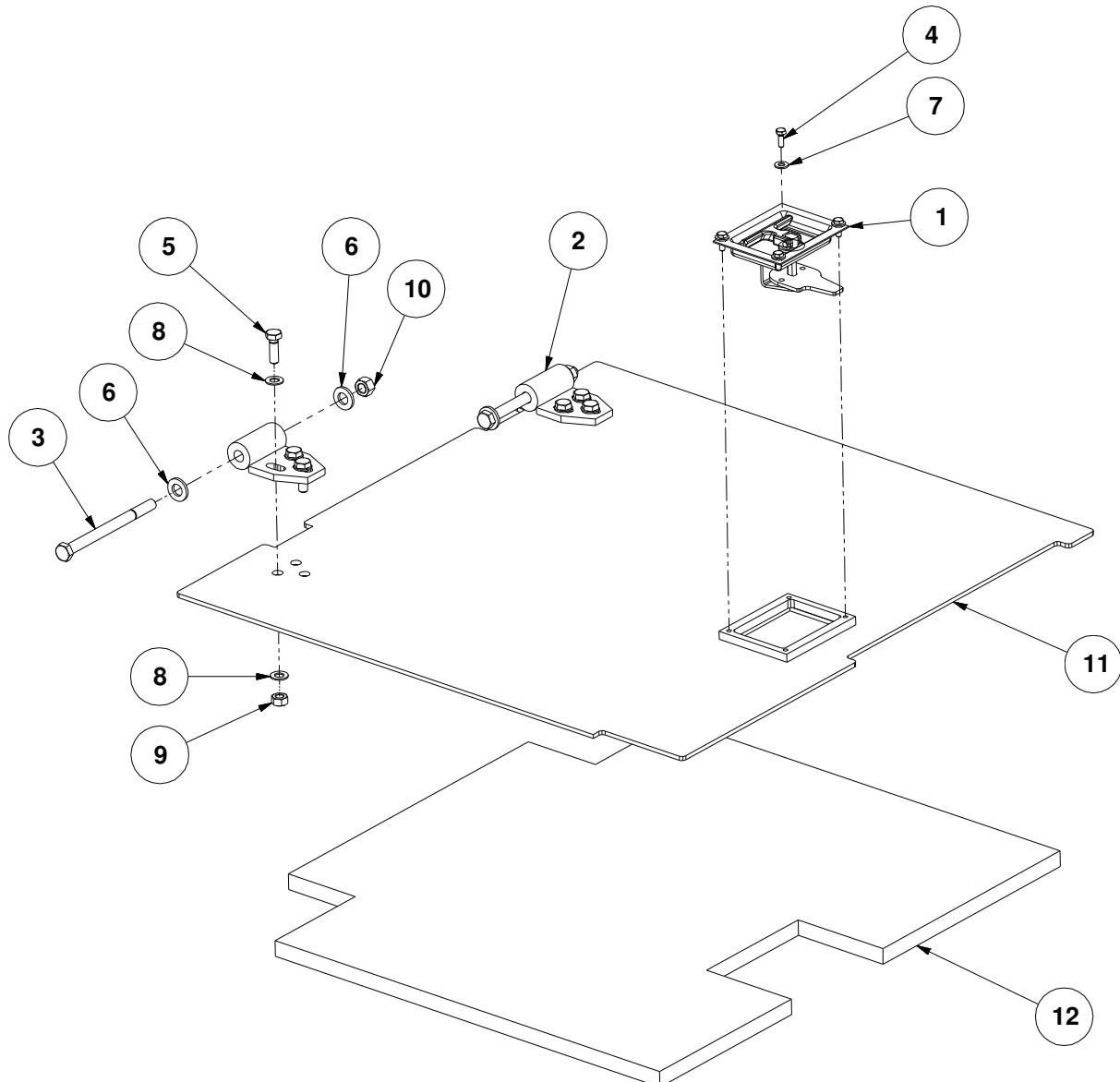
**Sandvik Underground Mining Flameproof Equipment**

**A2U220-197964****COVER, TRANS. FRONT, STD. &  
NAUTITEC****04-07-11****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	114962		1	Handle-Recessed Lock
2	246633		2	Hinge
3	445402864		2	Bolt Hex Head M12 x 150mm Long
4	445502656		4	Bolt Hex Head M6 x 16mm Long
5	445502802		6	Bolt Hex Head M10 x 30mm Long
6	450061619		4	Washer, Flat 12 mm
7	450062504		4	Washer, Flat 6 mm
8	450062508		6	Washer, Flat 10 mm
9	450081022		6	Washer, Spring 10 mm
10	450081116		4	Washer, Spring 6 mm
11	455309034		6	Hex Nut M10 X 1.5
12	455309036		2	Hex Nut M12 X 1.75
13	A2U220-197669		1	Cover, Front Trans - Slimline Dash
14	A2U220-197863		1	Sound Insulation 19 Thk x 513 x 826

A2U220-197965  
REV. 0**COVER ASSEMBLY, TRANS., REAR**

04-07-12



**Cover Assembly - Transmission, Rear**  
(Exploded View)

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION    04-07-12**

Sandvik Underground Mining Flameproof Equipment

**A2U220-197965****COVER ASSEMBLY, TRANS., REAR****04-07-12****REV. 0**

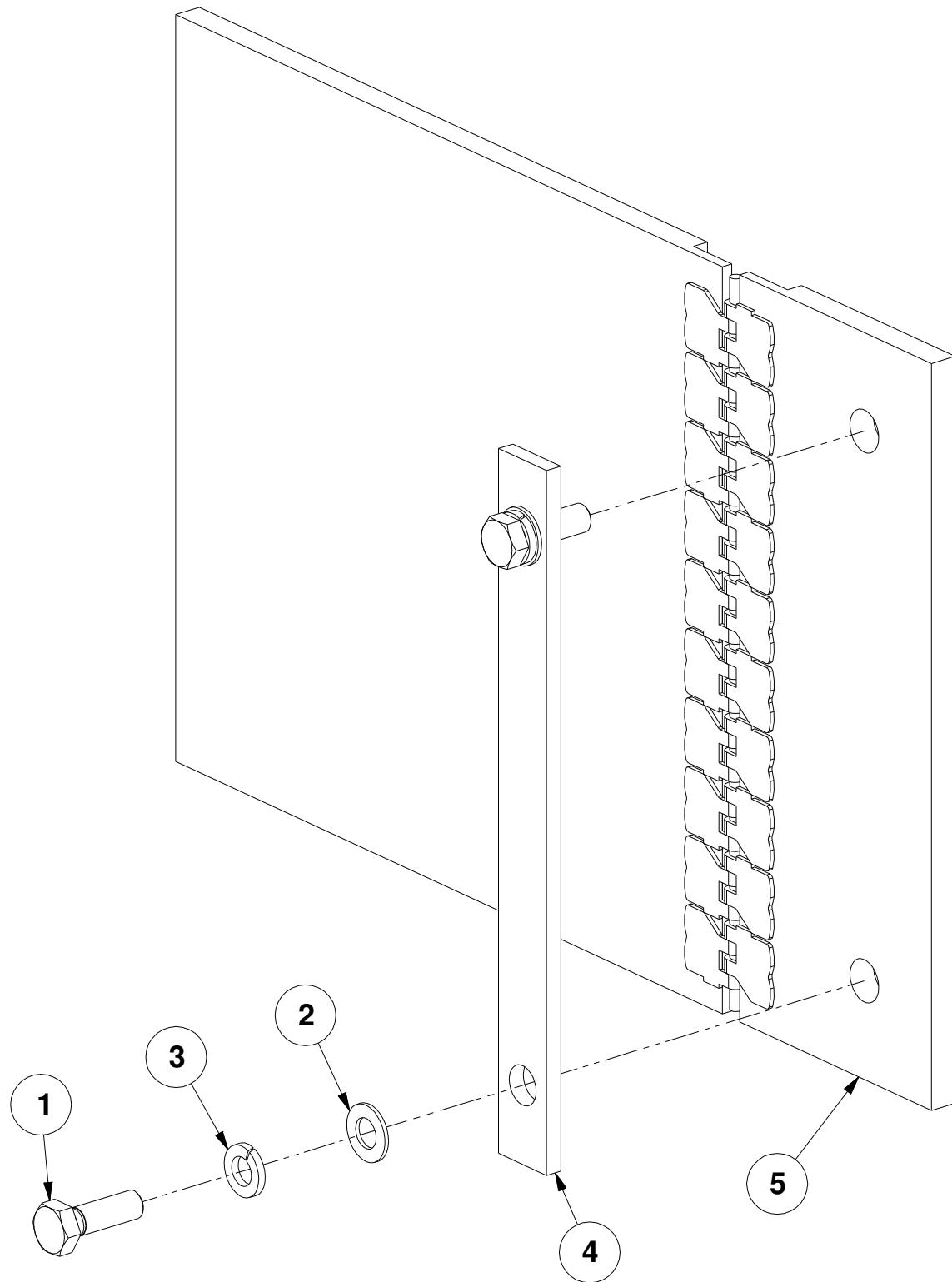
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	114962		1	Handle-Recessed Lock
2	246633		2	Hinge
3	445402864		2	Bolt Hex Head M12 x 150mm Long
4	445502656		4	Bolt Hex Head M6 x 16mm Long
5	445502802		6	Bolt Hex Head M10 x 30mm Long
6	450061619		4	Washer, Flat 12 mm
7	450062504		4	Washer, Flat 6 mm
8	450062508		12	Washer, Flat 10 mm
9	455309034		6	Hex Nut M10 X 1.5
10	455309036		2	Hex Nut M12 X 1.75
11	A2U220-197642		1	Cover - Trans, Rear
12	A2U220-197692		1	Sound Insulation 19 Thk x 640 x 700

A2U130-1971122

**COVER-PTO VALVES**

04-07-15

REV. 0



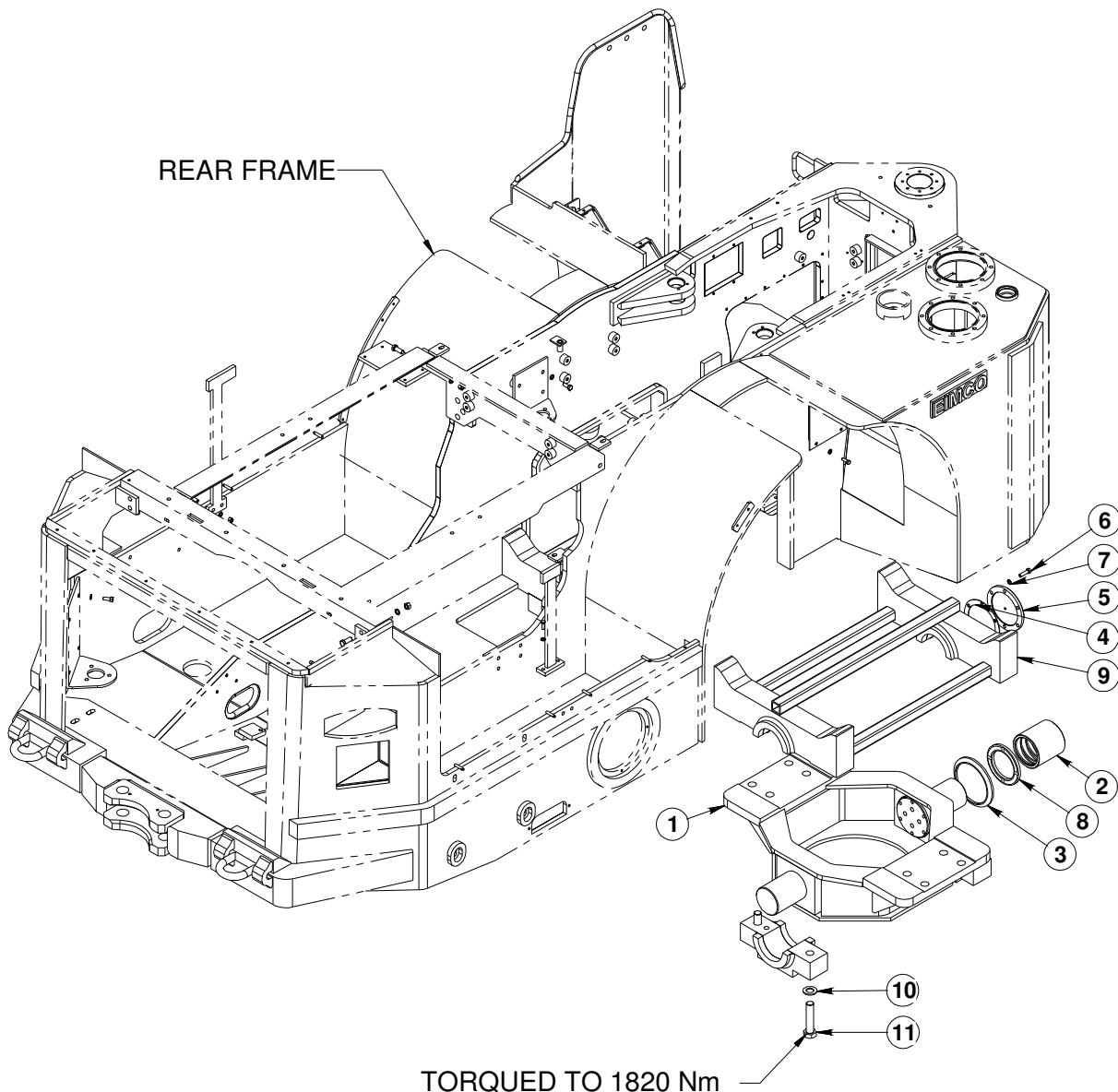
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-07-15**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U130-1971122****COVER-PTO VALVES****04-07-15****REV. 0**

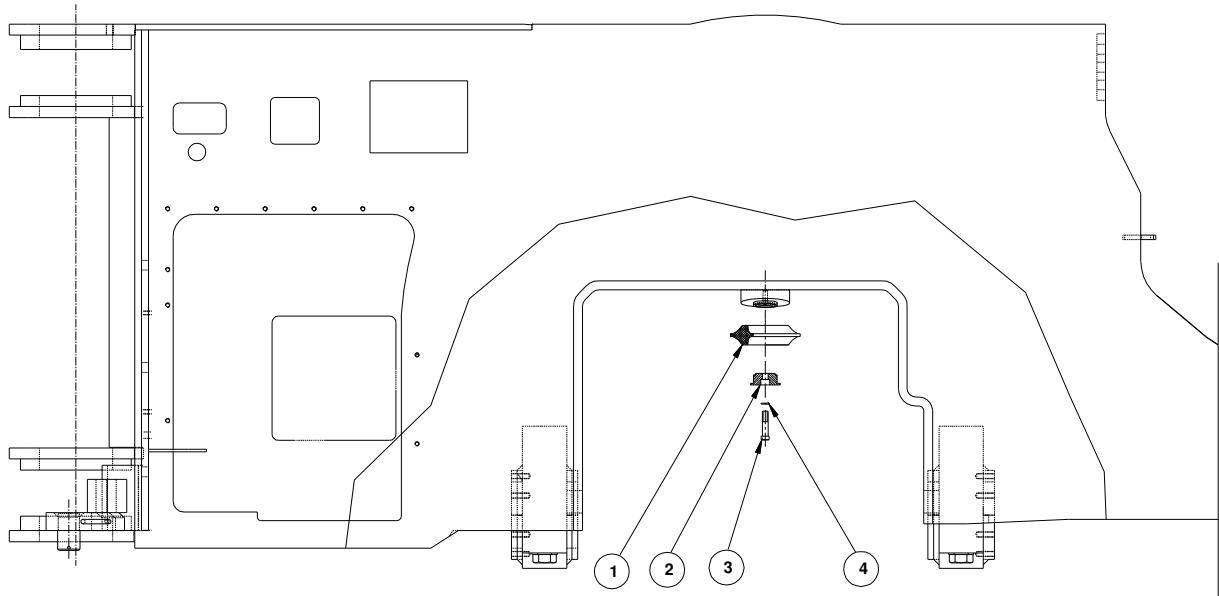
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502802	2		Bolt Hex Head M10 x 30mm Long
2	450062508	2		Washer, Flat 10 mm
3	450081022	2		Washer, Spring 10 mm
4	A2U130-197397	1		25 X 6 Flat . 250 LG
5	A2U130-197470	1		Cover - Pto Valves

**A2U220-360008****BOLSTER GROUP****04-08****REV. 1**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-360008****BOLSTER GROUP****04-08****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-361013	04-08-01	1	BOLSTER, ASSEMBLY
2	A2U220-194480		2	BUSH, BOLSTER HANGER
3	A2U220-195086		2	SEAL, BOLSTER
4	A2U220-396005		2	GASKET, BOLSTER
5	A2U220-391157		2	COVER
6	445502848		6	BOLT, HEX HD M12 x 45 LG
7	450081124		6	WASHER, SPRING M12
8	A2U220-194401		2	SPACER, BOLSTER
9	A2U220-362011		1	HANGER, BOLSTER
10	450086021		4	DISC-LOCK WASHER 30
11	445405316		4	BOLT, HEX HD M30 x 140 LG Grade 10.9

**A2U220-390041****BOLSTER STOP GROUP****04-08****REV. 0**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-08**

Sandvik Underground Mining Flameproof Equipment

**A2U220-390041****BOLSTER STOP GROUP****04-08****REV. 0**

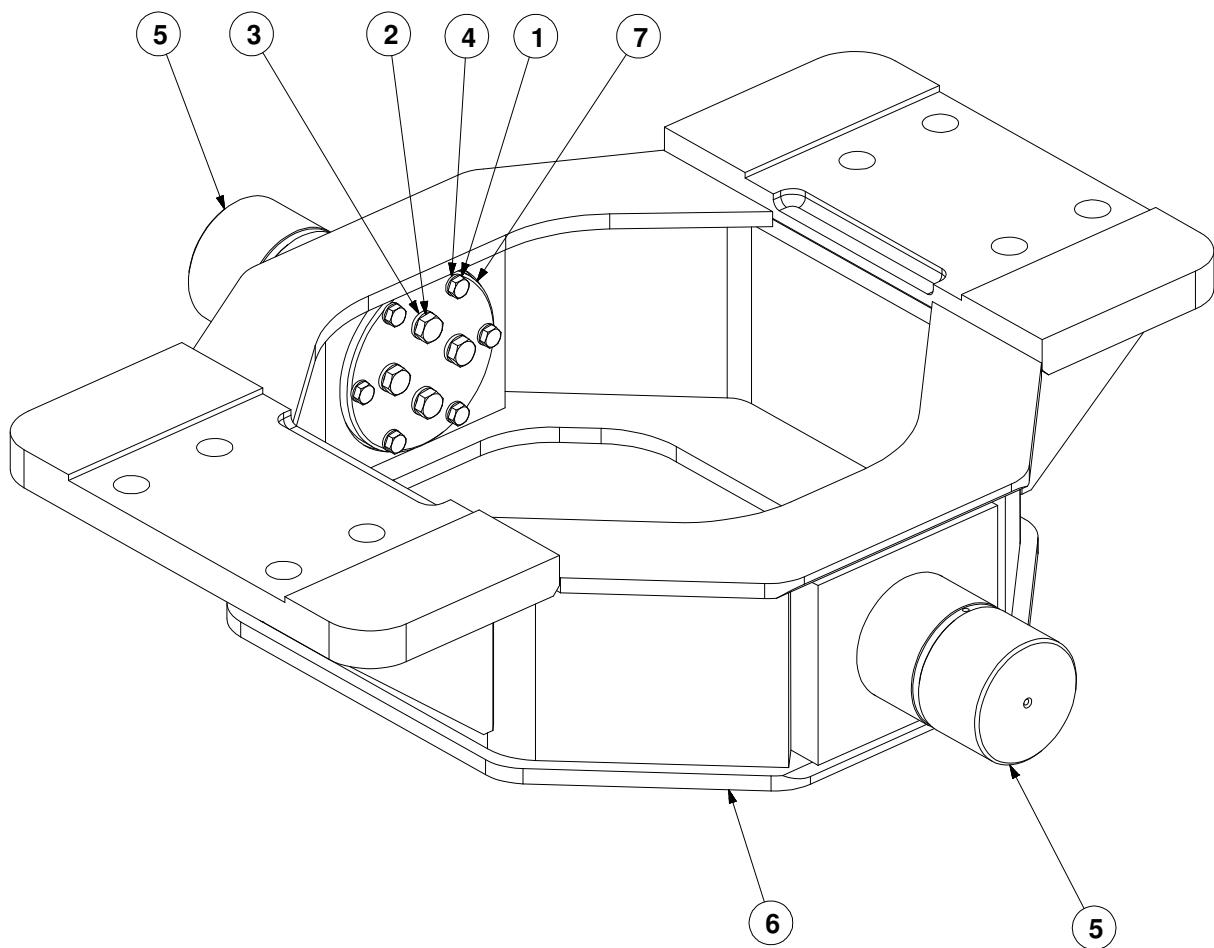
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	SXA5		1	RUBBER STOP
2	A2U900-361010		1	RUBBER BUSH MOUNT
3	64404396		1	WASHER, SPRING M12
4	445502843		1	CAPSCREW M12 x 30 LG

A2U220-361013

**BOLSTER ASSEMBLY REAR LS190**

04-08-01

REV. 3



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-08-01**

Sandvik Underground Mining Flameproof Equipment

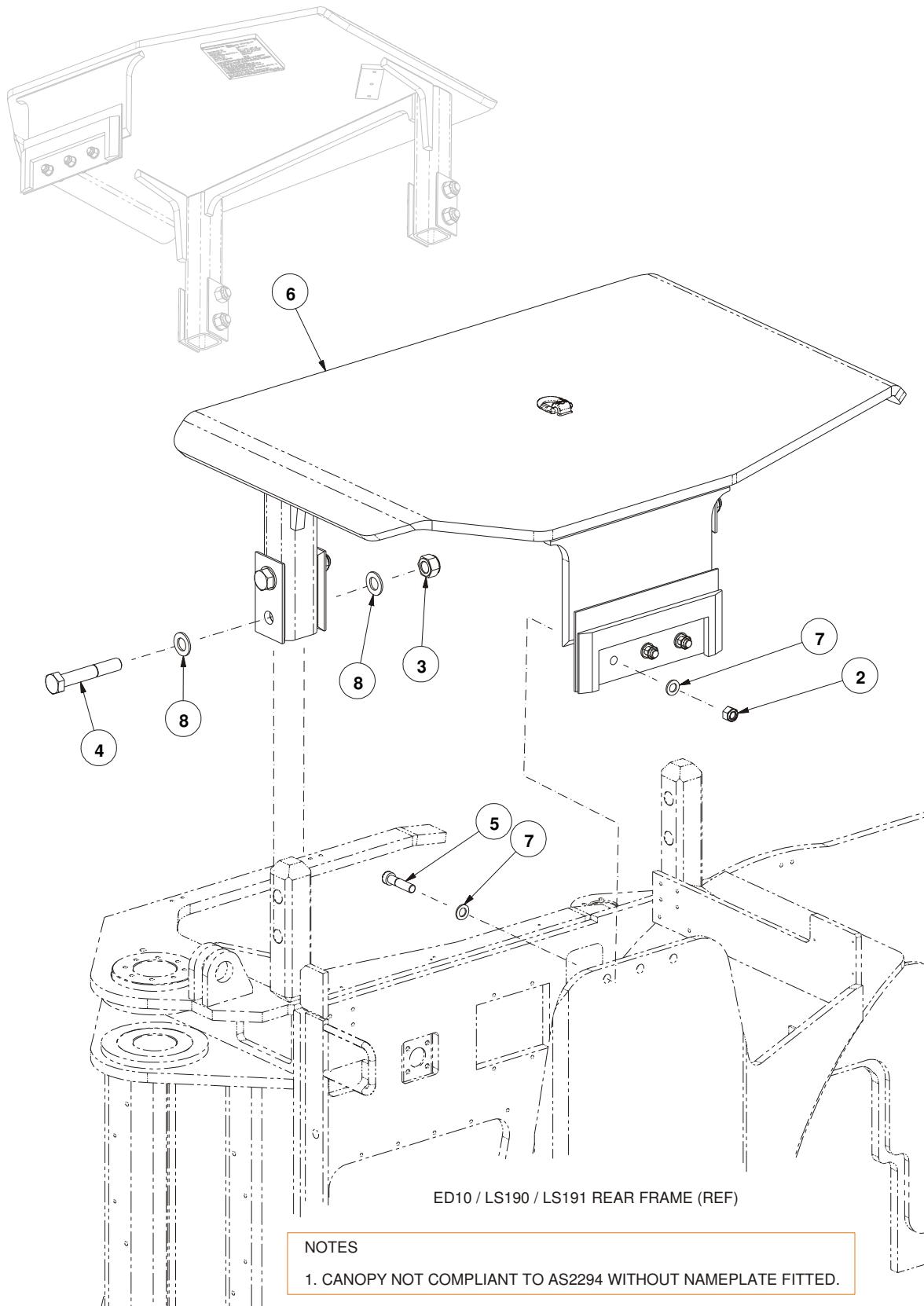
**PARTS MANUAL****A2U220-361013****BOLSTER ASSEMBLY REAR LS190****04-08-01****REV. 3**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502847	12		Bolt Hex Head, M12 x 40mm Long
2	445502939	8		Bolt Hex Head, M16 x 50mm Long
3	450081030	8		Washer, Spring, 16 mm
4	450081124	12		Washer, Spring, 12 mm
5	A2U220-193386	2		PIN BOLSTER PIVOT
6	A2U220-361012	1		BOLSTER WELDMENT
7	A2U220-391161	2		RETAINER PLATE

**A2U220-120119**  
**REV. 1**

**CERTIFIED CANOPY LS190/ LS191  
2.2M**

**04-09**



**NOTES**

1. CANOPY NOT COMPLIANT TO AS2294 WITHOUT NAMEPLATE FITTED.

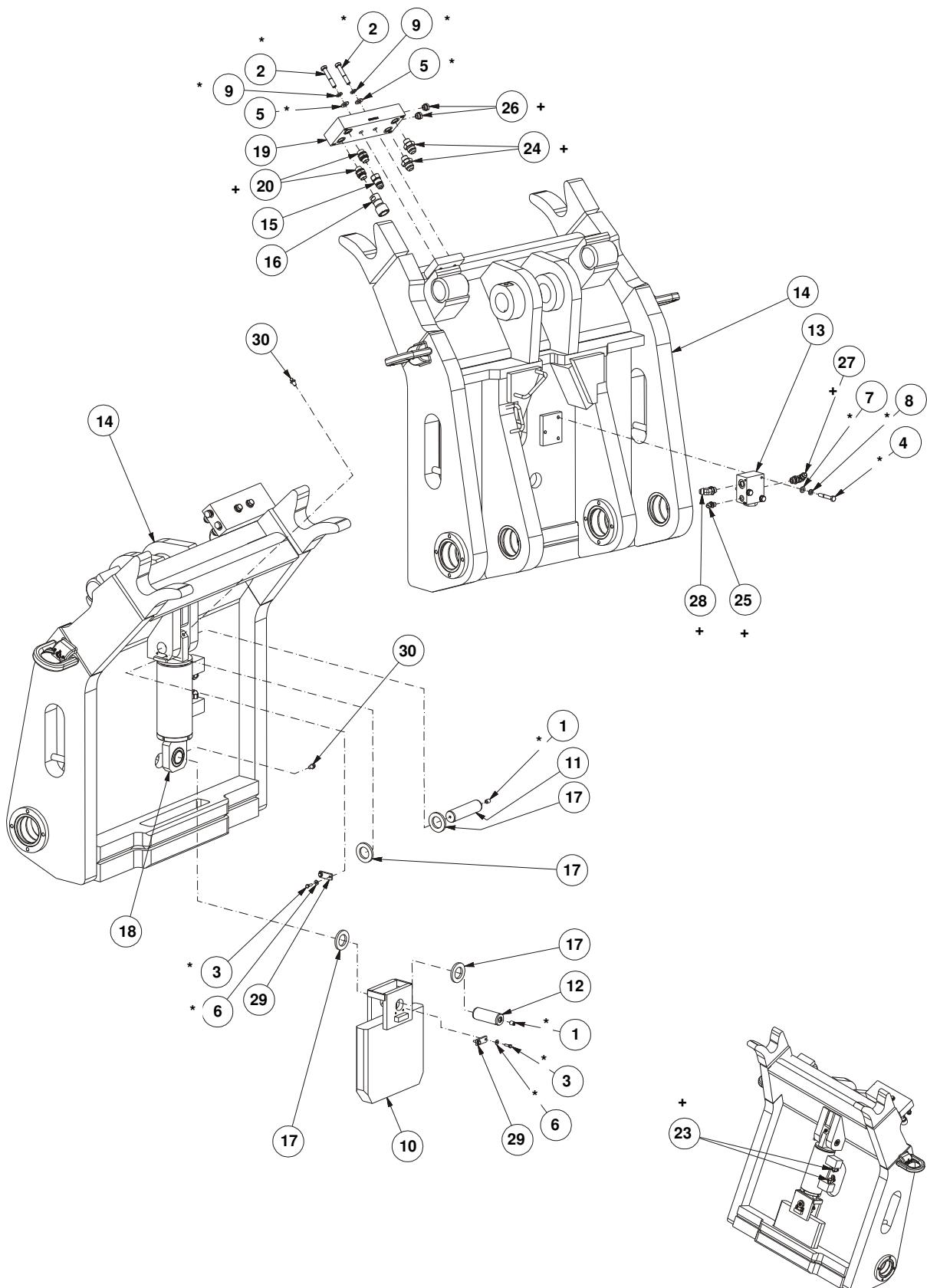
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**PARTS MANUAL****CERTIFIED CANOPY LS190/ LS191**

04-09

**A2U220-120119****2.2M****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BD00007958	1	1	Fastener Kit
2	A2U900-196243	3	3	Hex Nyloc Nut, M20 X 2.5, ISO 898-2
3	A2U900-196238	4	4	Hex Nyloc Nut, M30 X 3.5, ISO 898-2
4	A2U900-196210	4	4	Bolt Hex Head, M30 x 200mm Long (cut to 180mm)
5	A2U900-196241	3	3	SHCS M20 X 80LG
6	A2U220-121217	1	1	Canopy Weldment ED10, 2.2m
7	450061624	6	6	Washer, Flat, 20 mm
8	450061631	8	8	Washer, Flat, 30 mm

**A2U220-160188**
**QDS CRADLE GROUP, LS190/ LS191**
**04-10**
**REV. 4**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 04-10**
**Sandvik Underground Mining Flameproof Equipment**

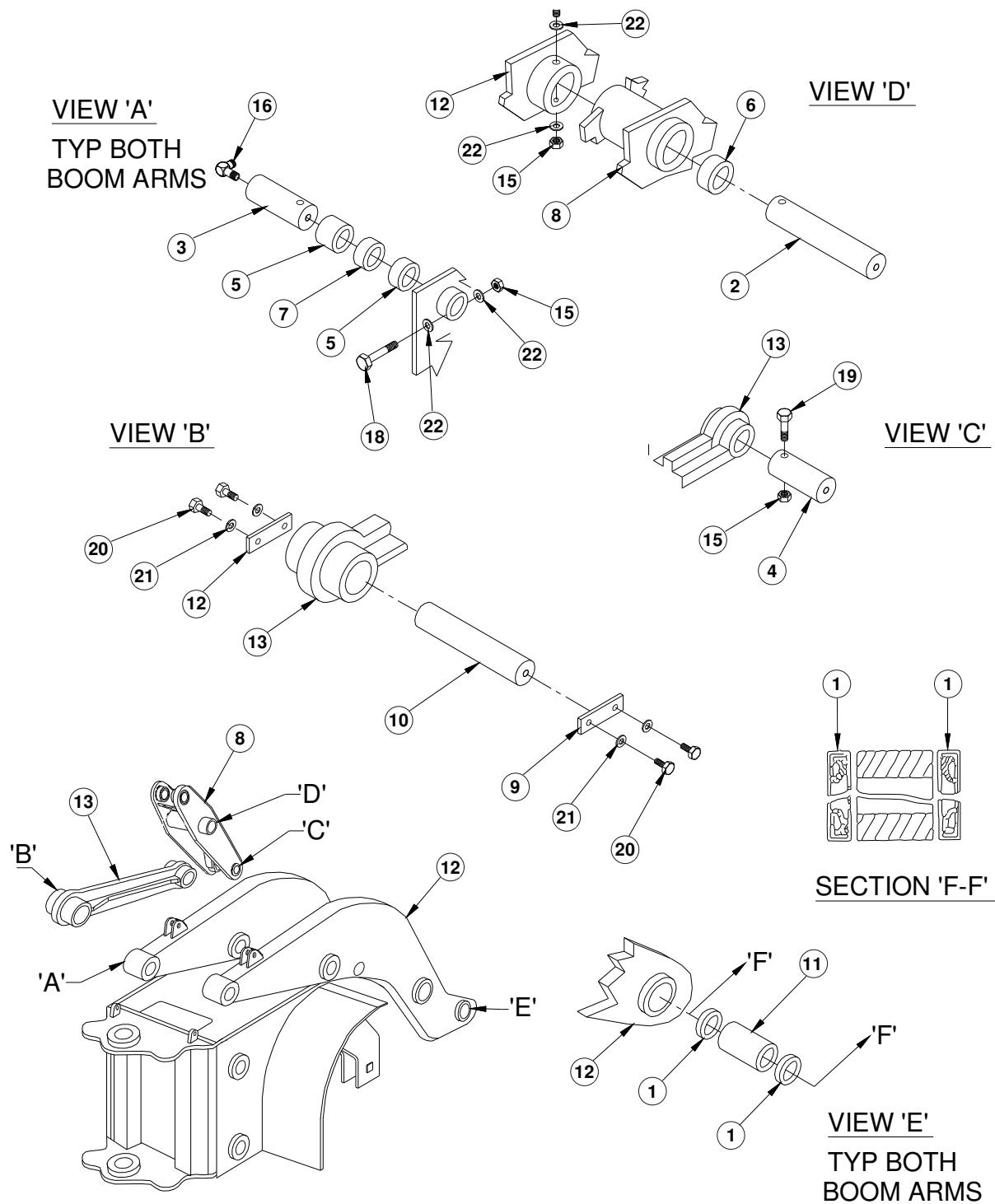
**A2U220-160188**
**QDS CRADLE GROUP, LS190/ LS191**
**04-10**
**REV. 4**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	445250836		2	Socket Set Screw, M12 X 1.75 X 16mm Long
2	445402853		2	Bolt Hex Head, M12 x 70mm Long
3	445502660		4	Bolt Hex Head, M6 x 20mm Long
4	445502811		3	Bolt Hex Head, M10 x 65mm Long
5	450061619		2	Washer, Flat, 12 mm
6	450062504		4	Washer, Flat, 6 mm
7	450062508		3	Washer, Flat, 10 mm
8	450081022		3	Washer, Spring, 10 mm
9	450081124		2	Washer, Spring, 12 mm
10	A2U130-1911076		1	LOCK WEDGE
11	A2U130-193436		1	Pin - QDS Lock Cyl. Mount
12	A2U130-193439		1	Pin - QDS Lock Cyl. Wedge
13	A2U130-594180		1	Pilot Check Valve - QDS Lock
14	A2U220-162248		1	QDS Cradle W/ Bushes
15	A2U900-596147		1	Quick Connect 1/2" BSPP Male
16	A2U900-596148		1	Quick Connect 1/2" BSPP Female
17	A2U913-196004		4	SPACER
18	BD00013421	05-33-04	1	CYLINDER ASSEMBLY
19	BD00003891		1	QDS Manifold
20	BD00004071		2	Nipple, 1/2" BSPP O-Ring - 1/2" BSPP O-Ring
*	BD00007895		1	Fastener Kit
+	BD00007896		1	Fitting Kit
23	D17-0812		2	Elbow 90, 1/2" NPT x 3/4" JIC M/M
24	D256-0817		2	NIPPLE, 1/2" BSPP O-Ring x 1.1/16" JIC
25	D257-0407		1	Elbow 90, 1/4" BSPP x 7/16" JIC M/M
26	D259-06		2	PLUG 3/8" BSPP O-RING
27	D53-1212		1	Elbow 90, 3/4" UNO-Ring x 3/4" JIC M/M
28	D54-1212		1	ELBOW 45, 3/4" UNO-Ring x 3/4" JIC M/M
29	EA6003-5		2	Keeper Plate
30	P1FG		2	GREASE NIPPLE 1/8"

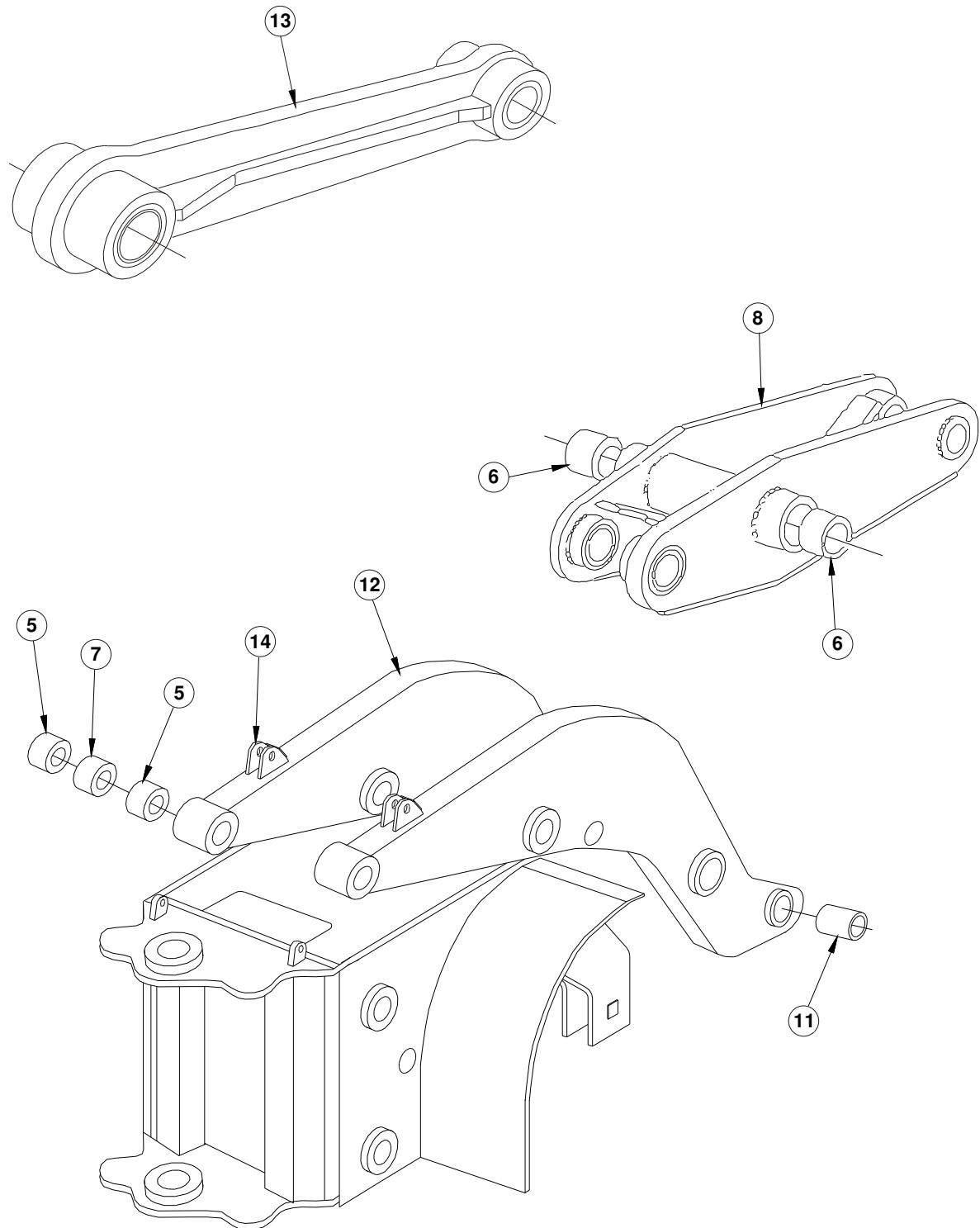
**A2U220-150037**  
**REV. 2**

## LIFT ARM GROUP

**04-11**



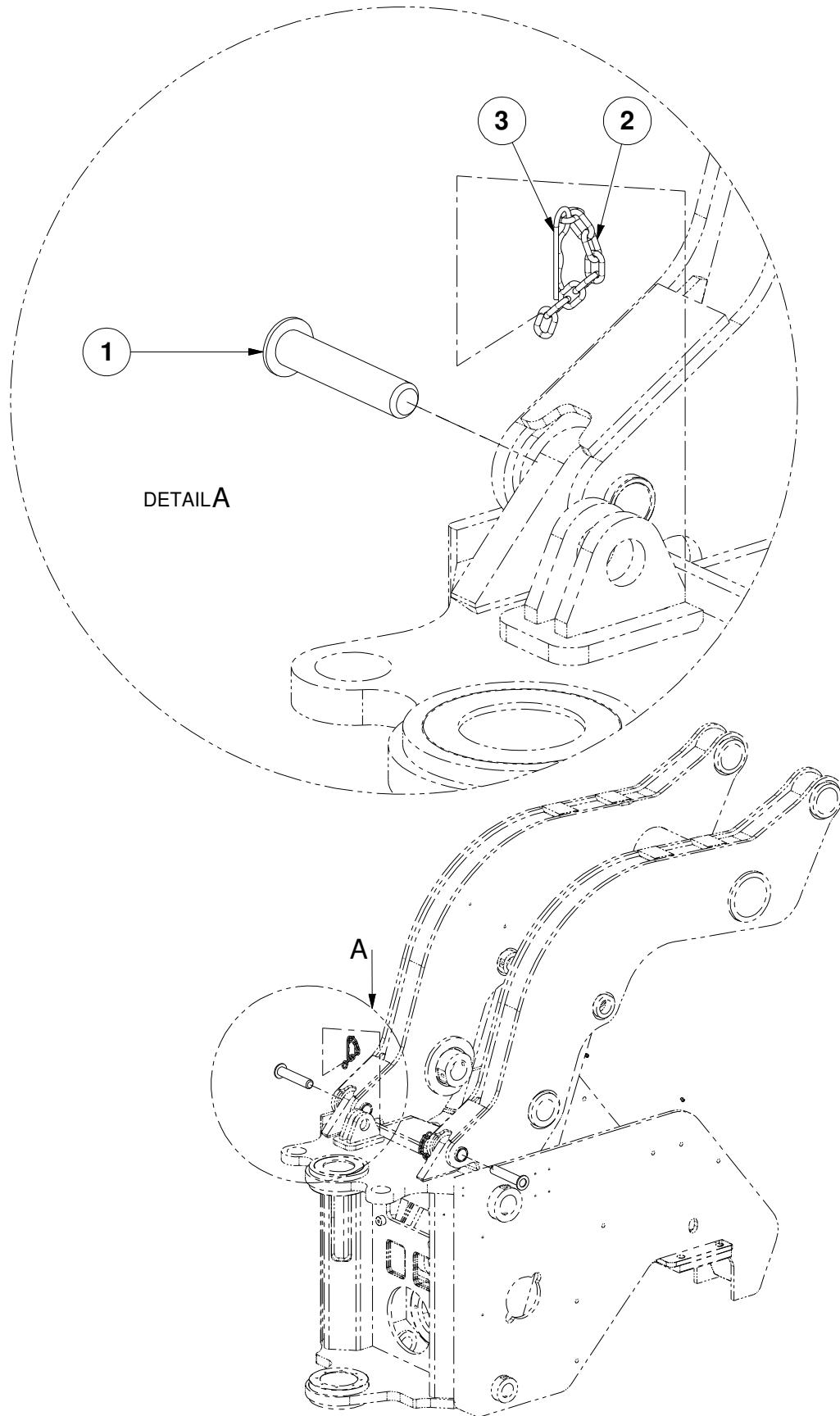
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-150037  
REV. 2****LIFT ARM GROUP****04-11**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-150037****LIFT ARM GROUP****04-11****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	110237		4	SEAL
2	A2U130-193434		1	PIN
3	A2U220-193445		2	PIN
4	A2U130-193432		1	PIN
5	222411		4	BUSHING
6	222412		2	BUSHING
7	222742		2	SPACER
9	234221		2	SUPPORT BAR
10	A2U130-193431		1	PIN
11	247065		2	BUSHING, BRONZE
13	A2U220-152019	04-11-02	1	LOWER LINK COMPLETE
14	A2U130-190122-3	04-11-01		LIFT ARM LOCK GROUP
15	L210		4	NUT
16	P1FG		5	GREASE NIPPLE 1/8" PT ST
17	T10GG104		1	BOLT
18	T10GG12		2	CAPSCREW
19	T10GG96		1	BOLT, HEX HD
20	T6GG16		4	CAPSCREW
21	W6GF		4	WASHER, SPRING
22	W10GA		4	WASHER, FLAT

**A2U130-190122****LIFT ARM LOCK GROUP****04-11-01****REV. 3****PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION 04-11-01**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

A2U130-190122

LIFT ARM LOCK GROUP

04-11-01

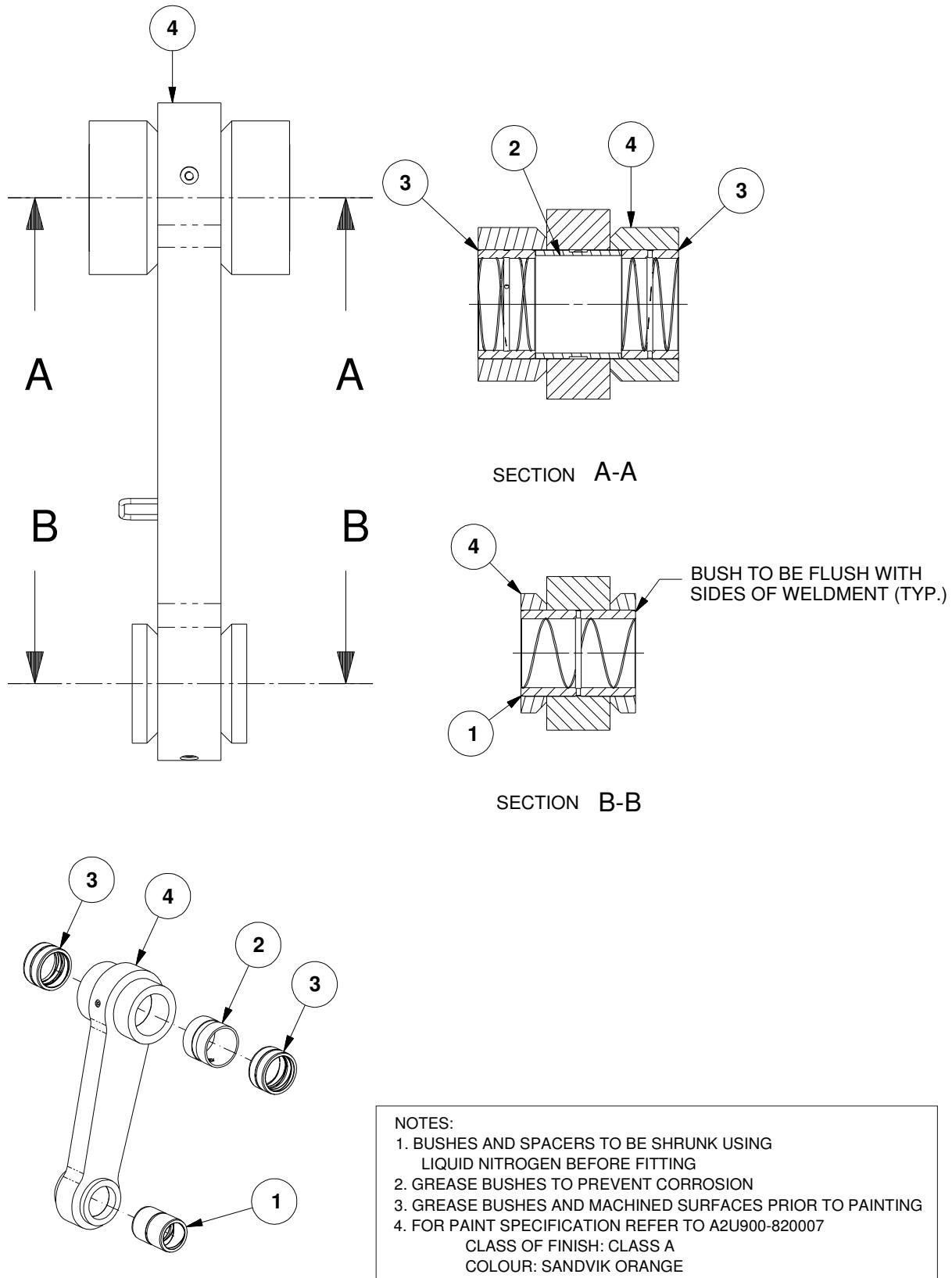
REV. 3

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-193550	2	2	Pin, Lock
2	A2U913-192001	2	2	Chain, 6mm X 8 Links
3	A2U913-198001	2	2	'R' Clip, B12 X 5mm

**A2U220-152019**  
**REV. 2**

**LOWER LINK COMPLETE**

**04-11-02**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-11-02**

Sandvik Underground Mining Flameproof Equipment

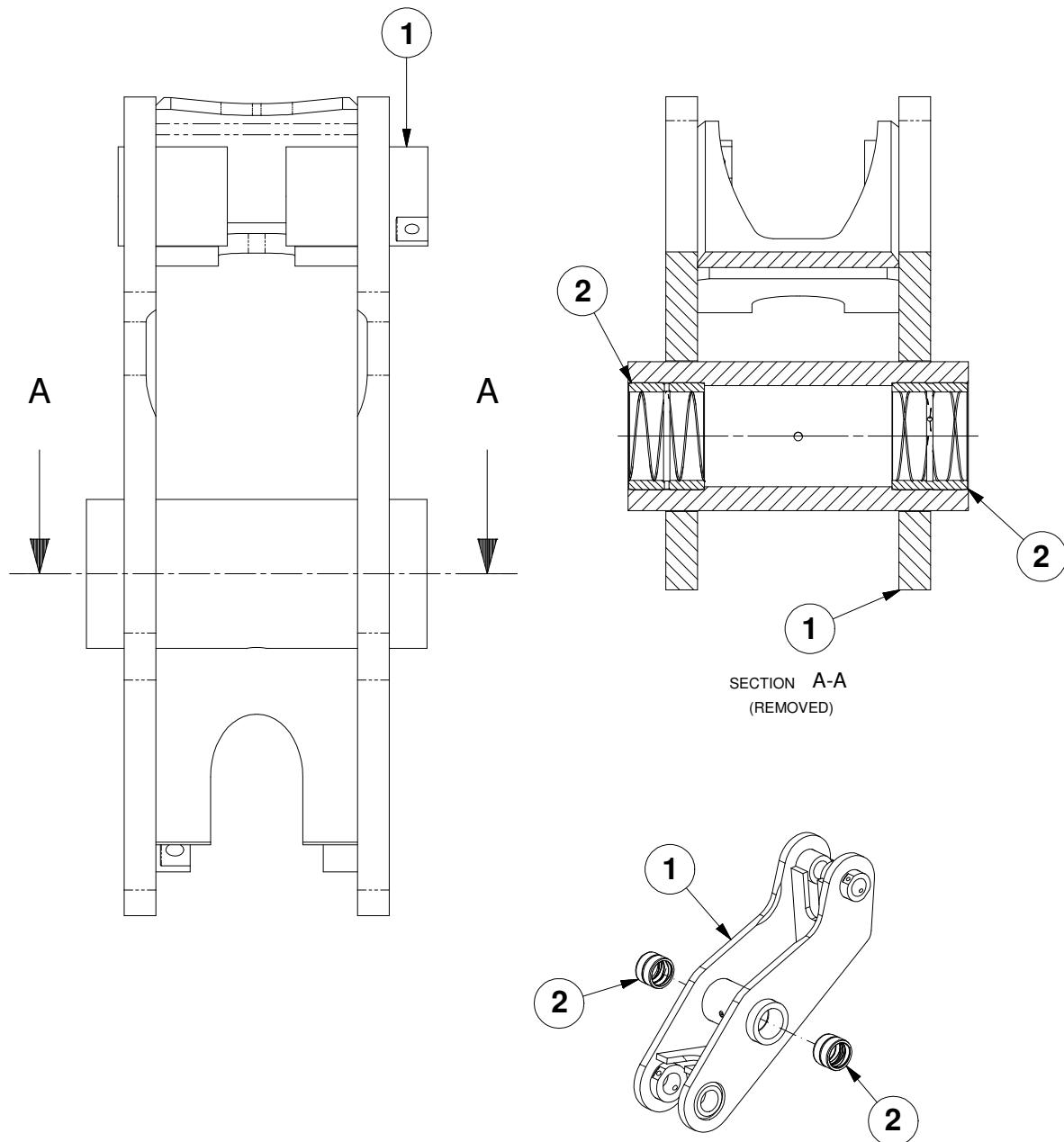
**A2U220-152019****LOWER LINK COMPLETE****04-11-02****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	222413			Bush
2	226270			Spacer
3	226271			Bush
4	A2U220-152014			Lower Link Weldment

**A2U220-152018**  
**REV. 3**

**INTERMEDIATE LINK COMPLETE  
LS190/ LS191**

**04-11-03**



**NOTES:**

1. BUSHES TO BE SHRUNK USING LIQUID NITROGEN BEFORE FITTING
2. GREASE BUSHES TO PREVENT CORROSION
3. GREASE BUSHES AND MACHINED SURFACES PRIOR TO PAINTING
4. FOR PAINT SPECIFICATION REFER TO A2U900-820007  
CLASS OF FINISH: CLASS A  
COLOUR: SANDVIK ORANGE
5. STAMP WITH SANDVIK PART AND REVISION NUMBER WHERE INDICATED.

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-11-03**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****INTERMEDIATE LINK COMPLETE  
LS190/ LS191**

04-11-03

**A2U220-152018****REV. 3**

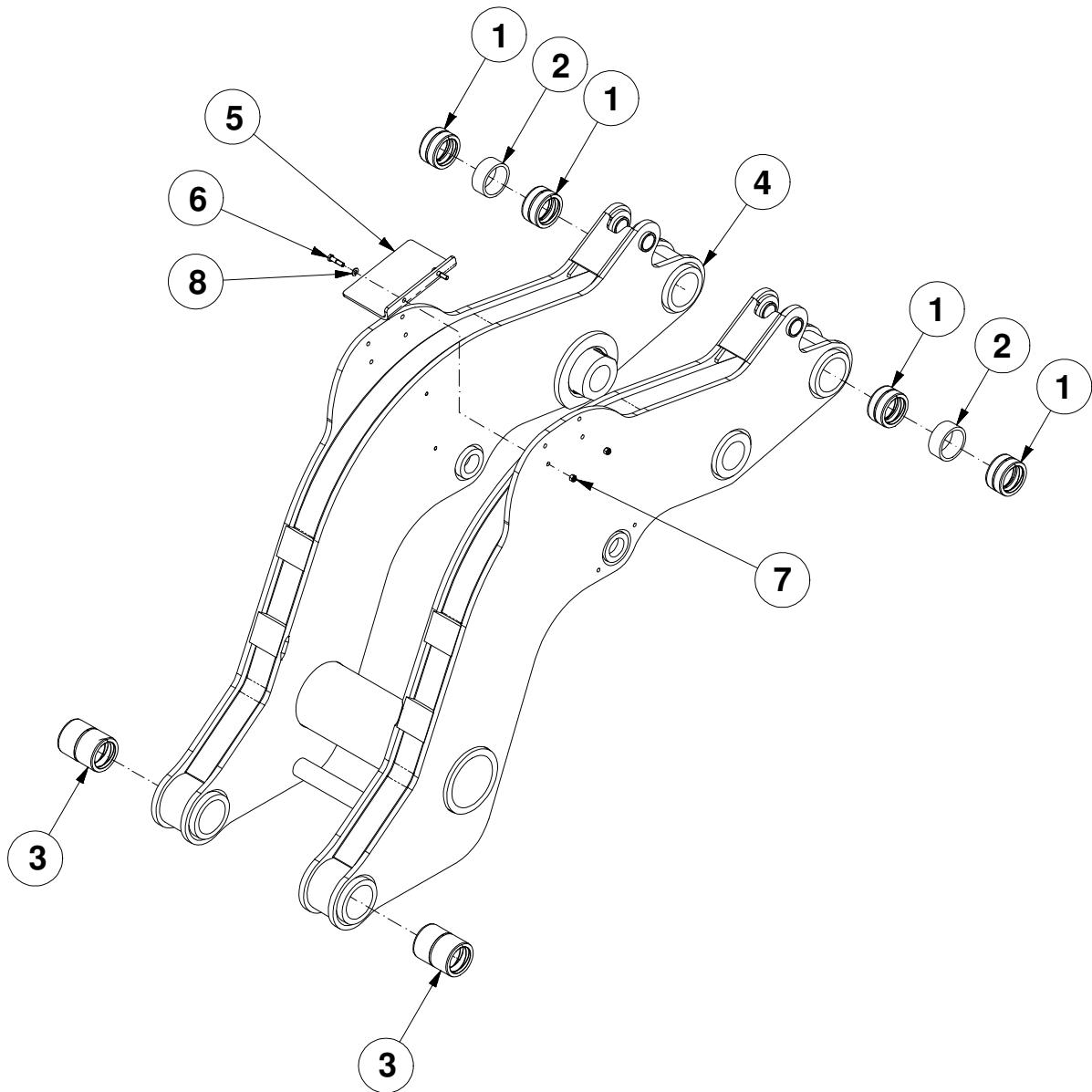
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-152015	1	1	Intermediate Link Weldment
2	222412	2	2	BUSH SAE 660 BRONZE

A2U220-151042

**LIFT ARM COMPL. WITH BUSHES**

04-11-04

REV. 3

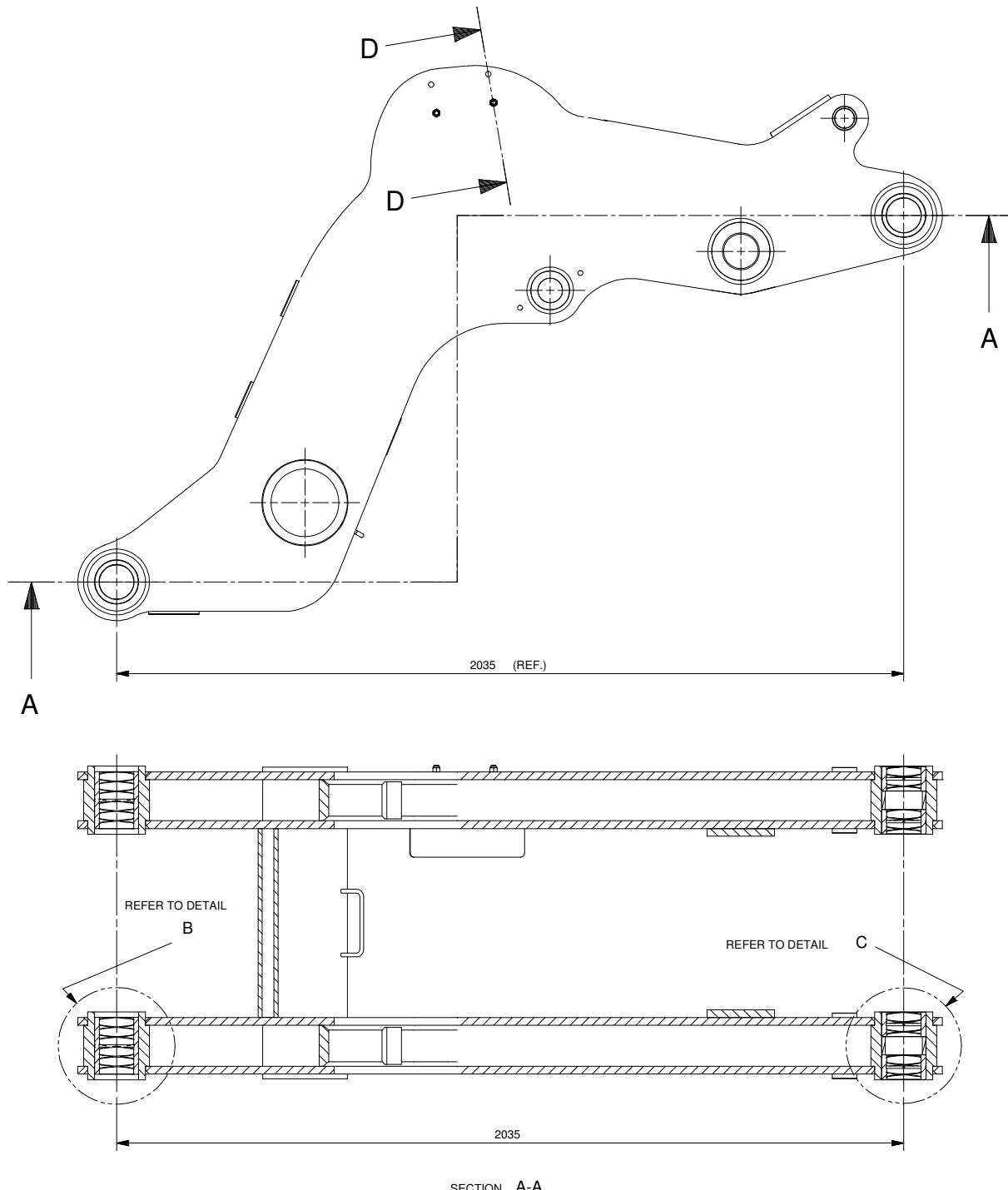
**NOTES:**

1. BUSHES AND SPACERS TO BE SHRUNK USING LIQUID NITROGEN BEFORE FITTING
2. DO NOT PAINT INSIDE BUSHES AND SPACERS
3. BUSHES SHALL BE GREASED TO AVOID CORROSION
4. GREASE BUSHES AND MACHINED SURFACES PRIOR TO PAINTING
4. FOR PAINT SPECIFICATION REFER TO A2U900-820007

CLASS OF FINISH: CLASS A

COLOUR: SANDVIK ORANGE

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**A2U220-151042****LIFT ARM COMPL. WITH BUSHES****04-11-04****REV. 3**

SECTION A-A

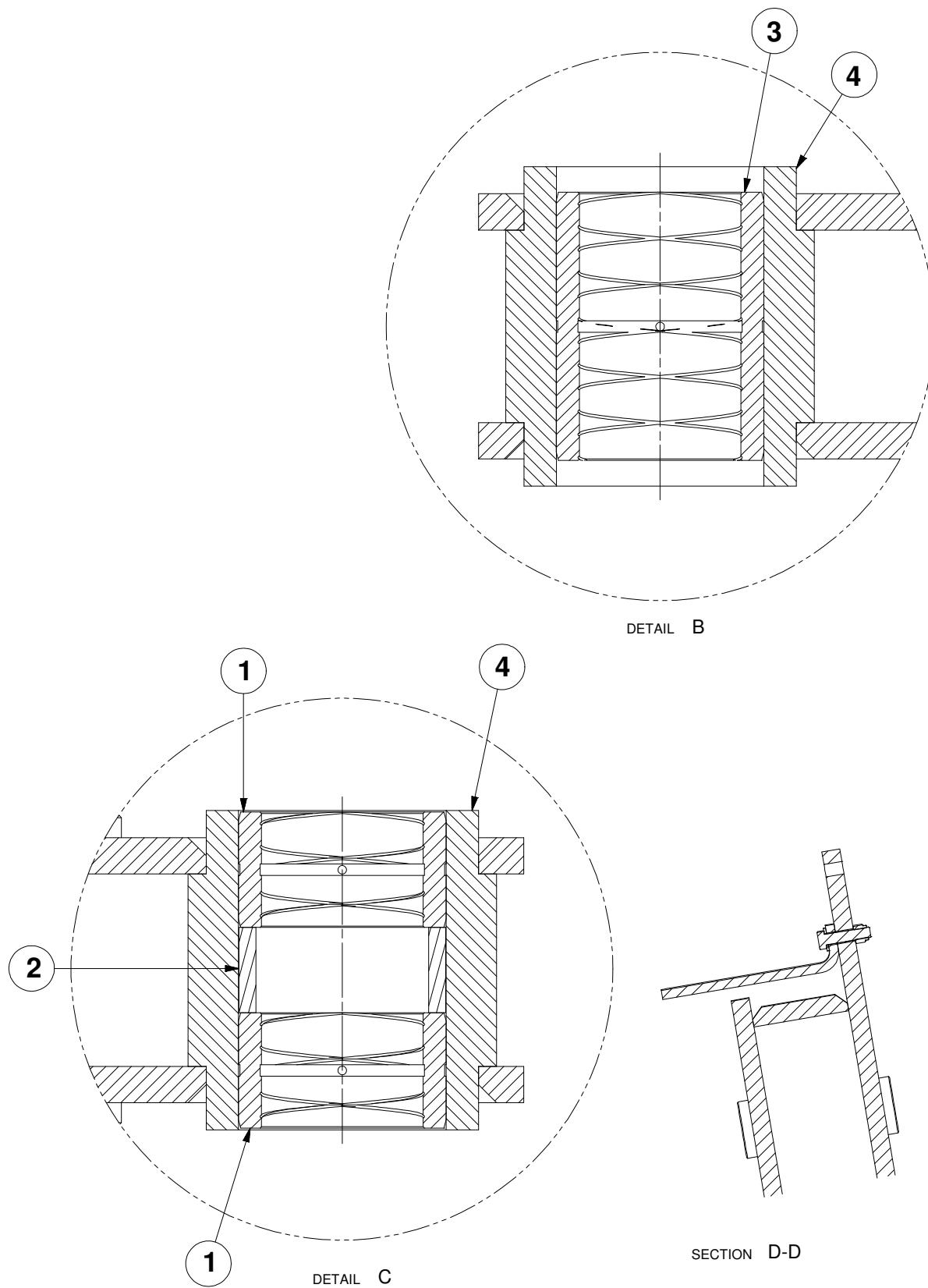
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

A2U220-151042

**LIFT ARM COMPL. WITH BUSHES**

04-11-04

REV. 3



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-11-04**

Sandvik Underground Mining Flameproof Equipment

**A2U220-151042****LIFT ARM COMPL. WITH BUSHES****04-11-04****REV. 3**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	222411		4	Bush - Lift Arm Top Pivot
2	222742		2	Spacer - Pivot Lift Arm Top
3	247065		2	Bush - QDS Pivot Lower
4	A2U220-151037		1	Lift Arm Weldment
5	BD00023327		1	MANIFOLD COVER BRACKET
6	S0012050B		2	BOLT, M12 x 1.75 x 50mm
7	S0612175		2	NYLOC - M12 x 1.75
8	S0712		2	WASHER, 12 mm, FLAT

A2U900-694064  
REV. 0**SAFETY BULLETIN****04-13-01****SAFETY BULLETIN**  
READ AND UNDERSTAND FIRST, THEN ACT1(4)  
SB1002  
Rev. AApril 7<sup>th</sup>, 2010

1. Topic:	<b>FAILURE OF THE PARK BRAKE PILOT VALVE TO APPLY THE PARK BRAKES RESULTING IN MACHINE RUNAWAY WHICH MAY RESULT IN RUNOVER OR COLLISION INJURIES</b>		
2. Product(s) / Part(s) / Serial number(s):	ALL MACHINES FITTED WITH PARK BRAKE PILOT VALVE A2U900-694064 INCLUDING:  SANDVIK 913, 913-6, 130, 130 HD, LS160 (FORMER NAME ED6), LS170 (FORMER NAME ED7), LS170L (FORMER NAME ED7LP), LS190 (FORMER NAME ED10, 220) LOADERS, AND  SANDVIK 936, TS350 (FORMER NAME ED25), TS390 (FORMER NAME ED30), TS490 (FORMER NAME ED40, 940)		
3. Possible occurrence of topic:	<input type="checkbox"/> Transport	<input type="checkbox"/> Maintenance	
	<input checked="" type="checkbox"/> Operation	<input type="checkbox"/> Spare parts	
	<input checked="" type="checkbox"/> Tramming	<input type="checkbox"/> Others:	
4. Market area:	<input checked="" type="checkbox"/> EU, Others	<input checked="" type="checkbox"/> Canada, USA, Australia	
5. Supplementary safety information including new hazard(s) identified how to avoid the hazard(s) and the potential consequences of not avoiding the hazard:	<p><b>DANGER</b></p>  <p><b>RUNOVER OR COLLISION HAZARD!</b> Operating a machine with loose or damaged park brake pilot valve may result in machine runaway and runover or collision injuries. <b>DO NOT</b> operate the machine with loose or damaged controls. <b>ALWAYS</b> check controls for damage or looseness prior to operation. Report defects immediately to service personnel, and mark defective machines as out-of-service until the problem is rectified. <b>ALWAYS</b> confirm the brakes have applied via the gauges prior to unlatching the door and exiting the cab.</p>		

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ABN: 38 070 973 330  
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Fax: +61 2 49258 757

This document shall be incorporated in the "information of use" documentation and kept there for the life of the product.  
Unless otherwise specified, Sandvik accepts no responsibility for changes, labor or replacements incurred from this bulletin.

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION 04-13-01**

Sandvik Underground Mining Flameproof Equipment

**A2U900-694064****SAFETY BULLETIN****04-13-01****REV. 0****SAFETY BULLETIN**

READ AND UNDERSTAND FIRST, THEN ACT

2(4)  
SB1002  
Rev. A**6. Actions to be taken immediately:**

Immediately inspect all machines utilising park brake pilot valve (Sandvik part number) A2U900-694064 and check the following:

Check that the valve is mounted securely and not loose and is not damaged. Check that the mounting screw threads are in good condition.

On level ground in a safe area free of traffic and pedestrians, check the proper application and release of the park brake by pulling and pushing the park brake pilot valve in accordance with the operator manual. Check that the eyeball indicator and brake head pressure gauge (for spring applied brake systems, also known as posि-stop), or park brake gauge (for pressure applied brake systems, also known as LCB) correctly indicate whether the brake is applied or released:

- ③ Push in button (park brake applied) – park brake eyeball indicator should go red, gauge should register zero pressure.
- ③ Pull out button (park brake released) – park brake eyeball indicator should go green, gauge should register brake release pressure (check machine schematic or operator manual for correct pressures).

If any faults are identified, do not operate the machine, and mark it out-of-service until the faults are rectified by a service technician. Replace the valve if it is damaged or mounting threads are in poor condition.

The Owner of machinery has a liability to inform and when necessary to train according to the content of this Bulletin all the personnel (like operators, maintenance personnel) whom this Bulletin concerns.

**7. List of Attachment(s):**

There are no attachments to this Safety Bulletin.

**8. Recommended Actions:**

Continue to inspect the condition and mounting of machine controls daily and prior to operation in accordance with the service schedule and operator manual. Mark any machines as out of service until any identified faults are rectified.

Continue to conduct braking function checks and brake component inspections as per the service schedules.

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**SECTION 04-13-01****Sandvik Underground Mining Flameproof Equipment**

A2U900-694064

**SAFETY BULLETIN**

04-13-01

REV. 0

**SAFETY BULLETIN**  
READ AND UNDERSTAND FIRST, THEN ACT3(4)  
SB1002  
Rev. A**9. Further details to Customers:**

An incident involving this park brake pilot valve reported to Sandvik by the colliery at which the incident occurred. A photo of the failed valve is shown in the photo below. It was reported that the operator of an ED10 loader stopped the machine at a set of double doors in preparation to manually open the doors. The operator struck the park brake knob in the cab, exited the cab and proceeded to open the first of the double doors. Then, as the operator was opening the second door he noticed the unmanned machine was rolling towards him. The operator got out of the way and the machine rolled to a stop, resting against the half opened door. No injuries or damage to equipment occurred.

The investigation undertaken by the colliery determined that the locking nut on the park brake valve had come loose and fallen between the valve and actuator button. The locking nut in the fallen position has allowed the valve to move freely behind the dash, stopping the actuator button and spool from engaging the park brake.

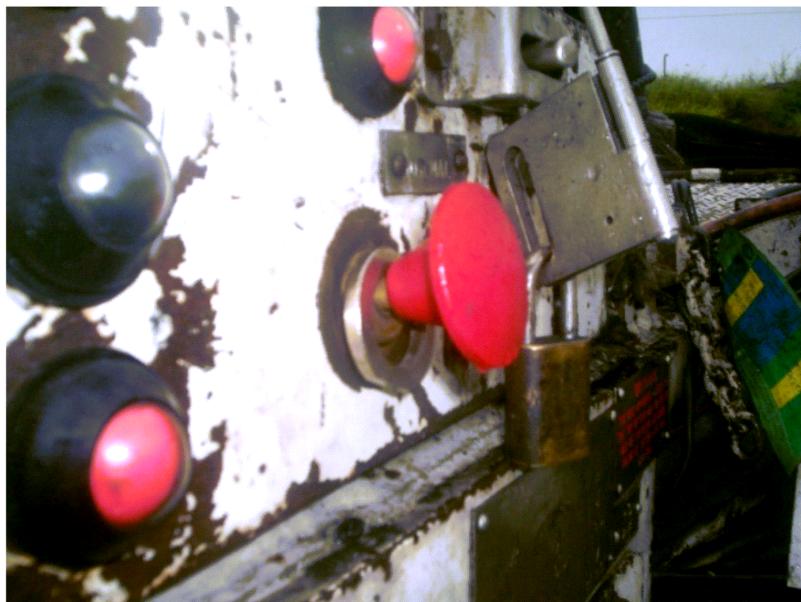


Photo of park brake pilot valve in failed mounting position (photo provided by colliery)

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**SECTION 04-13-01**

**Sandvik Underground Mining Flameproof Equipment**

A2U900-694064  
REV. 0

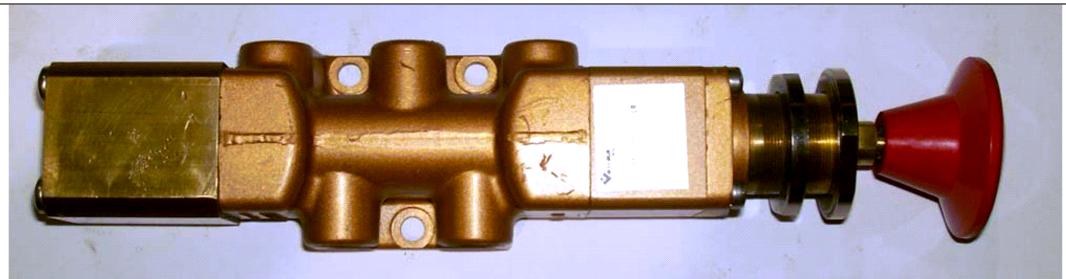
**SAFETY BULLETIN****04-13-01****SAFETY BULLETIN**  
READ AND UNDERSTAND FIRST, THEN ACT4(4)  
SB1002  
Rev. A

Photo of park brake pilot valve, Sandvik part number A2U900-694064.

**Author:** Mark Peristy, Sandvik Hexham.

**Approved by Product Line Manager:** Richard Osborn

Please contact your local Sandvik office for any further information you may require

---

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**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-13-01**

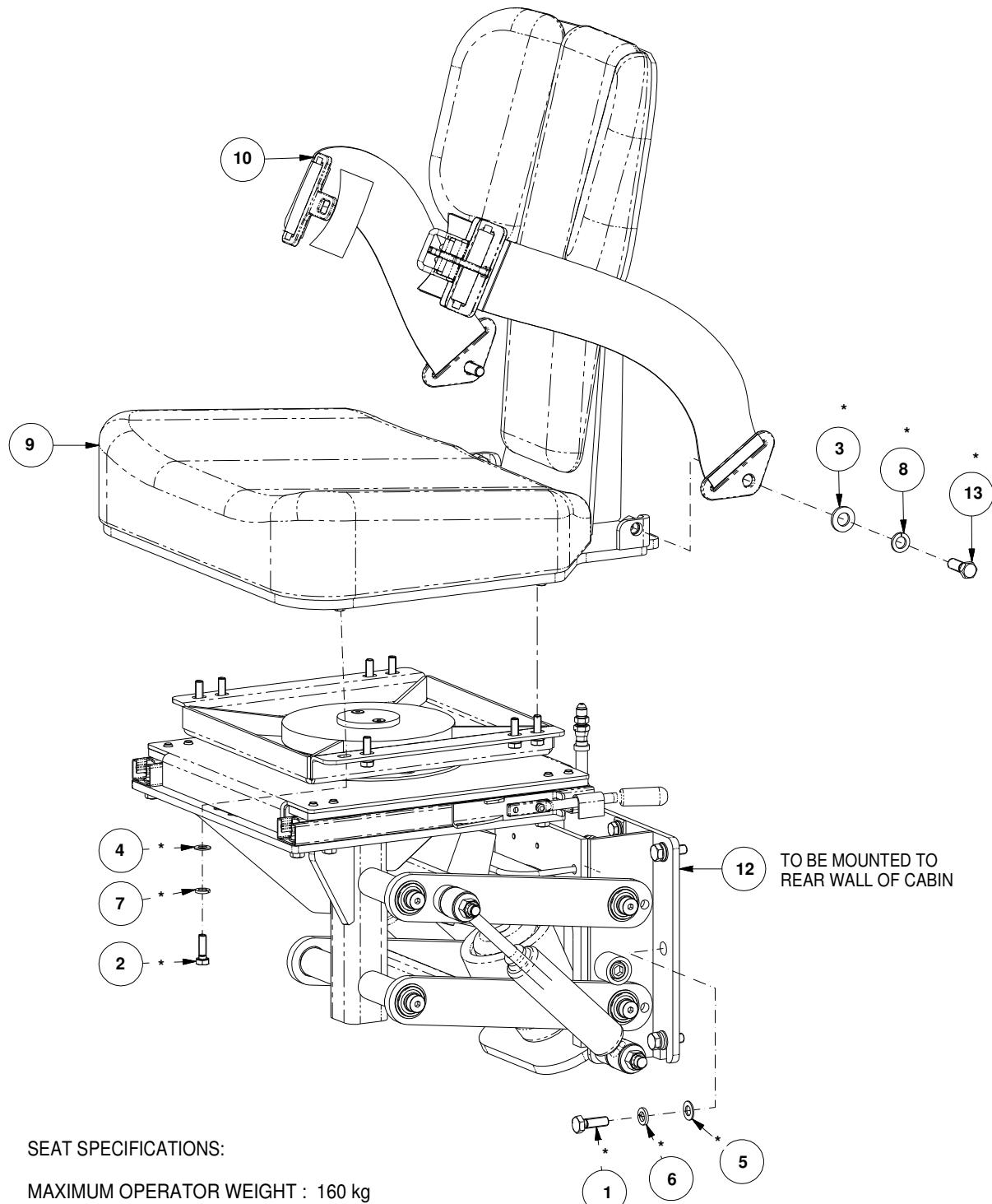
Sandvik Underground Mining Flameproof Equipment

**A2U220-170066**
**NAMEPLATE GROUP**
**04-14**
**REV. 1**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	255322	1		NAMEPLATE F,N,R
2	A2U900-172151	4		DECAL, WARNING ACCUMULATOR PRESSURE
3	A2U130-171205	1		NAMEPLATE TOWING
4	A2U130-171207	1		NAMEPLATE SHUTDOWN
5	A2U900-171567	1		NAMEPLATE ISOLATION VALVE
6	A2U936-171218	4		NAMEPLATE FOAM FILLED
7	A2U130-171730	1		NAMEPLATE PTO
8	A2U130-171332	1		NAMEPLATE QDS LOCK
9	A2U130-171333	1		NAMEPLATE QDS CONTROL
10	A2U130-171336	1		NAMEPLATE OPERATORS CHECK
11	A2U130-171337	1		NAMEPLATE BRAKE RELEASE
12	A2U130-171380	1		NAMEPLATE BUCKET CONTROL
13	A2U130-171402	1		NAMEPLATE, SHUTDOWN TEST
14	A2U130-171403	1		NAMEPLATE TRAILER
15	A2U130-171414	1		NAMEPLATE CONTROLS
16	A2U130-171478	1		NAMEPLATE PLUMMER BLOCK
17	A2U130-171479	1		NAMEPLATE IDLER PULLEY
18	A2U220-172132	2		EIMCO 220 DECAL
19	A2U900-171492	1		NAMEPLATE SAFETY WARNING
20	A2U900-171493	1		NAMEPLATE MAINT. WARNING
21	A2U900-171510	1		NAMEPLATE LOW WATER
22	A2U900-171511	1		NAMEPLATE SAFE START
23	A2U900-171512	1		NAMEPLATE ON/OFF PILOT
24	A2U900-172129	25		REFLECTIVE TAPE, BLUE (MEASURED IN METERS)
25	A2U900-172093	2		DECAL EIMCO
26	A2U913-171019	1		NAMEPLATE POTABLE WATER
27	A2U913-171156	1		NAMEPLATE EIMCO
28	A2U921-171162	3		NAMEPLATE KEEP ARMS INSIDE
29	A2U921-171166	1		PRESSURE WARNING, COOLANT
30	A2U921-171167	2		WARNING DO NOT STAND HERE
31	A2U921-171168	2		APPROVAL PLATE
32	A2U921-171172	1		NAMEPLATE FUEL
33	A2U921-171173	1		NAMEPLATE HYDRAULIC OIL
34	A2U921-171174	1		NAMEPLATE WATER
35	A2U921-171176	1		NAMEPLATE ROTATING FAN
36	A2U921-171177	2		VEHICLE OPERATING LIMITS
37	A2U921-171178	1		CONDITIONER APPROVAL
38	A2U921-171180	1		TOWING INSTRUCTIONS
39	A2U921-171195	1		TRANSMISSION DIPSTICK
40	A2U921-191196	1		NAMEPLATE DOOR WARNING
41	A2U936-171224	1		NAMEPLATE BRAKE ACCUM.
42	A2U936-171227	1		NAMEPLATE WARNING STEER
44	A2U900-172107	1		DECAL "EIMCO"
45	A2U900-172109	2		DECAL - STRIP (DARK BLUE / LIGHT BLUE)
46	A2U220-171716	6		INLET FLAMETRAP APPROVAL
47	A2U220-171720	1		NAMEPLATE, PTO GROUP

**A2U220-170066****NAMEPLATE GROUP****04-14****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
48	A2U220-171721	1	1	NAMEPLATE, EX. BACK PRESSURE
49	A2U900-171715	1	1	NAMEPLATE, DISCONNECT METHANE MONITOR
50	A2U220-171722	1	1	ENGINE OIL, FILL / DRAIN
51	A2U220-171723	1	1	TRANSMISSION OIL, FILL / DRAIN
52	A2U220-171728	1	1	COMPLIANCE PLATE, BRAKE SYSTEM
53	A2U130-171441	1	1	NAMEPLATE, DOOR CLOSE
54	A2U130-171440	1	1	PARK BRAKE INDICATOR
56	BD00003888	1	1	NAMEPLATE, DES COMPLIANCE
57	A2U220-171727	1	1	NAMEPLATE, FILTER HOUSING
58	A2U130-171676	1	1	NAMEPLATE, QDS VENT

**BD00000900**
**SEAT GROUP, JEL**
**04-15**
**REV. 4**

**SEAT SPECIFICATIONS:**

MAXIMUM OPERATOR WEIGHT : 160 kg  
 HEIGHT ADJUSTMENT : SELF LEVELLED  
 SUSPENSION : +10mm, -80mm  
 FORE / AFT ADJUSTMENT : 90mm  
 SWIVEL : ± 12

REFER TO CR0388 FOR SIP REPORT

ASSEMBLY TESTED TO ISO6683. REFER TO  
REPORT 0124 - SEAT TEST TO ISO6683.

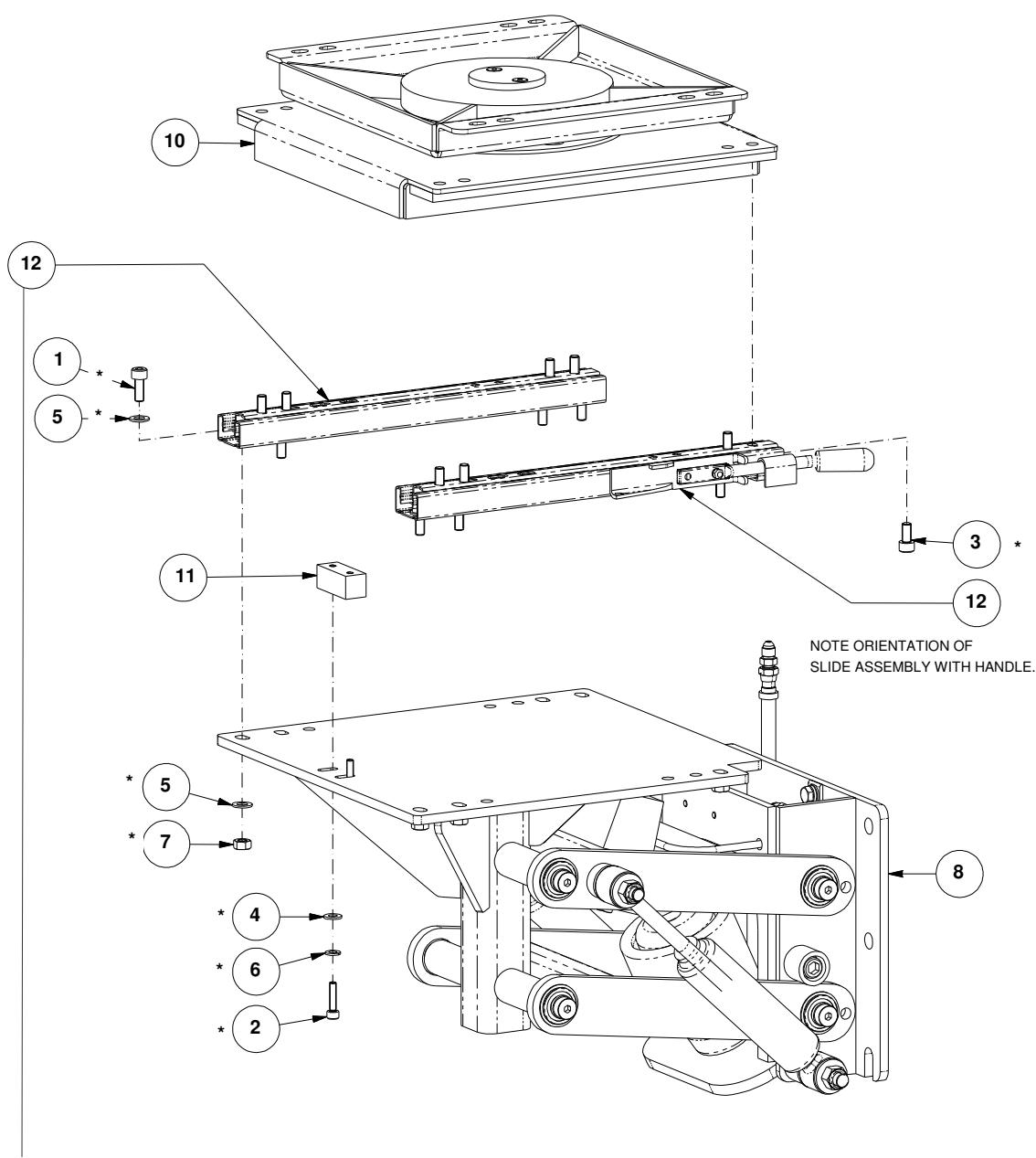
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-15**

Sandvik Underground Mining Flameproof Equipment

**BD00000900****SEAT GROUP, JEL****04-15****REV. 4**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502802*		6	Bolt Hex Head, M10 x 30mm Long
2	445504761*		8	Bolt Hex Head, M8 x 25mm Long
3	450061619*		2	Washer, Flat, 12 mm
4	450062506*		8	Washer, Flat, 8 mm
5	450062508*		6	Washer, Flat, 10 mm
6	450081022*		6	Washer, Spring, 10 mm
7	450081120*		8	Washer, Spring, 8 mm
8	450081124*		2	Washer, Spring, 12 mm
9	A2U900-411033		1	JEL seat
10	A2U900-483001		1	SEAT BELT
*	BD00002177		1	Fastener Kit
12	BD00003284	04-15-01	1	Seat Base Assembly
13	BD00009051*		2	7/16-UNF x 1 1/4 Hex Head Cap Screw

**BD00003284**
**SEAT BASE ASSEMBLY LS151/ 171/**
**04-15-01**
**REV. 6**
**191**

**NOTE:**

 ORIENTATION OF LHS SLIDE ASSEMBLY IS TO  
MATCH RHS SLIDE ASSEMBLY (WITH HANDLE).

 MOUNT SLIDES TO ITEM 10 (SWIVEL ASSEMBLY), BEFORE  
MOUNTING TO ITEM 8 (SEAT SUSPENSION ASSEMBLY).

ENSURE BOTH SLIDES ARE PARALLEL.

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 04-15-01**
**Sandvik Underground Mining Flameproof Equipment**

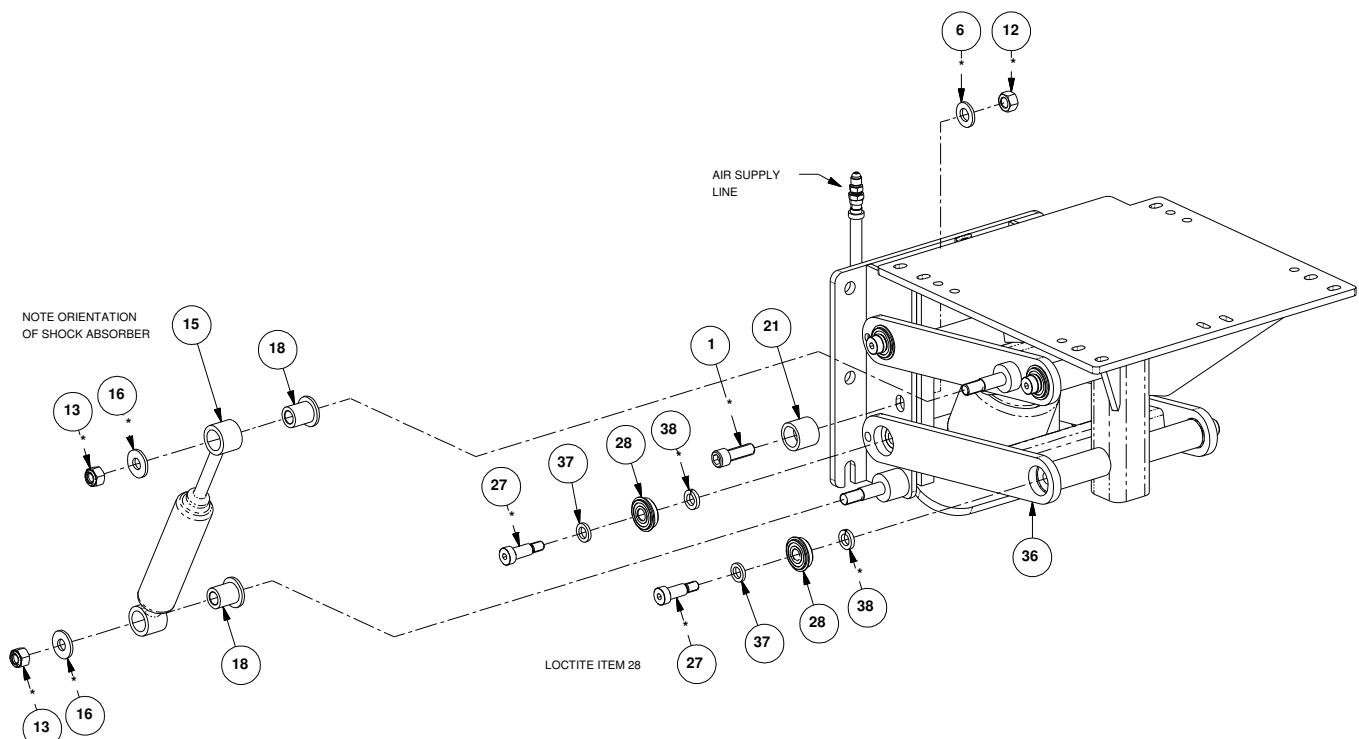
**PARTS MANUAL****SEAT BASE ASSEMBLY LS151/ 171/****04-15-01****BD00003284****191****REV. 6**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445202759*		7	SHCS M8 X 20LG
2	445208662*		2	SHCS M6 X 25LG
3	445208755*		8	SHCS M8 X 16LG
4	450062504*		2	Washer, Flat, 6 mm
5	450062506*		14	Washer, Flat, 8 mm
6	450081116*		2	Washer, Spring, 6 mm
7	455309030*		7	Hex Nut, M8 X 1.25
8	BD00000844	04-15-01-01	1	Seat Suspension Assembly
*	BD00003289		1	Fastener Kit
10	BD00005233	04-15-01-02	1	Swivel Assembly
11	BD00005768		1	Swivel Stop
12	BD00006230		1	Slide Rail Assembly

**BD00000844**  
**REV. 7**

**SEAT SUSPENSION ASSEMBLY**  
**LS151/ 171/ 191**

**04-15-01-01**



NOTES:

1. THIS ASSEMBLY IS TO BE SUPPLIED WITH SELF LEVELLING VALVE FITTED PER INSTRUCTIONS.

2. AIR SUPPLY LINE (ITEM 35), 500mm LONG 1/4" PARKER 611-4 FRAS WP 2.7MPa AIR HOSE AND ITEM 40 TO BE FITTED TO ITEM 41 ON AIR VALVE.

3. ITEM 41 TO BE MACHINED, SHORTENED BY 3mm (BSPT END) TO CORRECTLY FIT IN AIR VALVE.

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

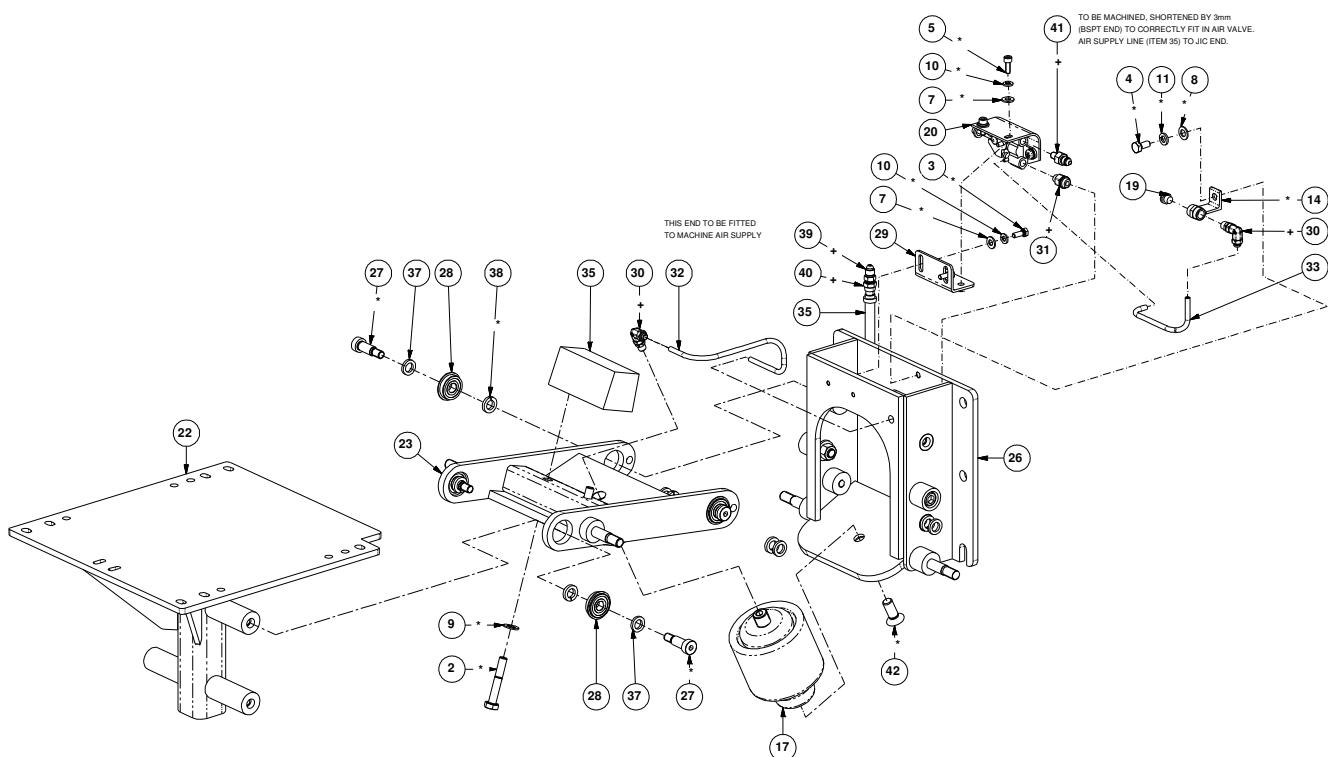
**SECTION    04-15-01-01**

Sandvik Underground Mining Flameproof Equipment

**BD00000844**  
**REV. 7**

**SEAT SUSPENSION ASSEMBLY**  
**LS151/ 171/ 191**

**04-15-01-01**



LOWER LEVER ARM WELDMENT AND  
SHOCK ABSORBER REMOVED FOR CLARITY

NOTES:

1. THIS ASSEMBLY IS TO BE SUPPLIED WITH SELF LEVELLING  
VALVE FITTED PER INSTRUCTIONS.

2. AIR SUPPLY LINE (ITEM 35), 500mm LONG 1/4" PARKER  
611-4 FRAS WP 2.7MPa AIR HOSE AND ITEM 40 TO BE  
FITTED TO ITEM 41 ON AIR VALVE.

3. ITEM 41 TO BE MACHINED, SHORTENED BY 3mm  
(BSPT END) TO CORRECTLY FIT IN AIR VALVE.

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

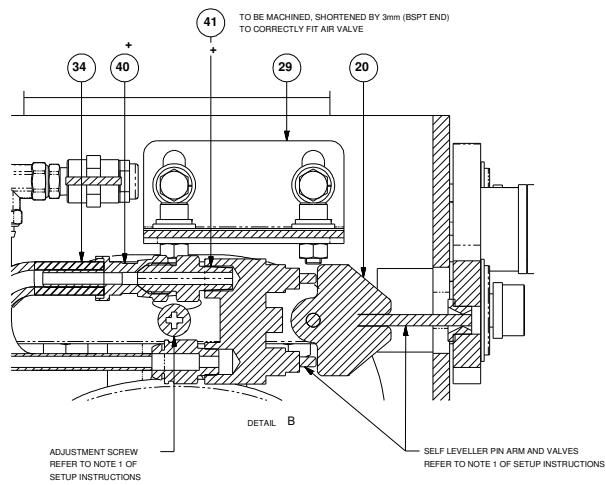
**SECTION 04-15-01-01**

Sandvik Underground Mining Flameproof Equipment

**BD00000844**  
**REV. 7**

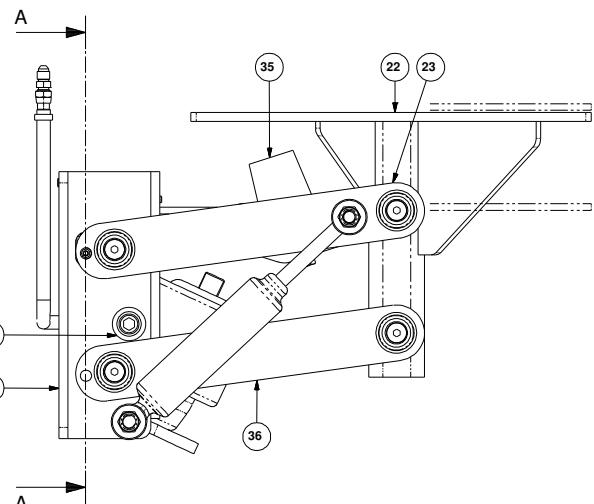
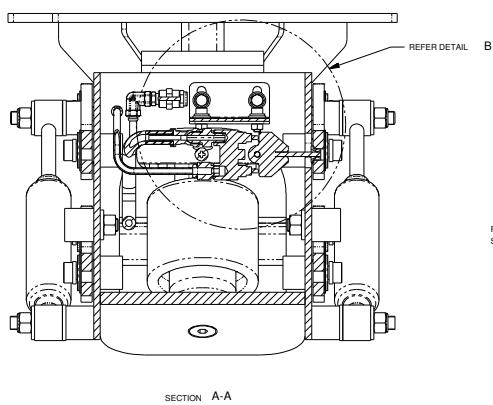
**SEAT SUSPENSION ASSEMBLY**  
**LS151/ 171/ 191**

**04-15-01-01**



SETUP INSTRUCTIONS

1. BEFORE FIXING TO BRACKET, ADJUST THE SCREW IN ITEM 20 SUCH THAT THE PIN ARM CAN NOT MOVE WITHOUT ACTIVATING VALVES. REFER DETAIL B.
2. USE SLOTTED HOLES IN ITEM 29 TO CORRECTLY POSITION SELF LEVELLING VALVE (ITEM 20). ITEMS 29 AND 20 SHOULD BE POSITIONED SUCH THAT ITEM 22 IS IN THE "SELF LEVELLED POSITION" (AS SHOWN IN VIEW BELOW) WITHOUT THE VALVE INJECTING OR EXHAUSTING AIR FROM THE MOVEMENT OF THE LEVER ARM.
3. THIS WILL GIVE THE SEAT ASSEMBLY SUSPENSION TRAVEL LIMITS OF +10mm, -80mm (TOTAL 90mm TRAVEL).
4. ADJUST POSITION OF ITEM 21 TO ACHIEVE THE UPPER SUSPENSION LIMIT AS SHOWN IN VIEW BELOW. ITEM 22 WILL HIT THE RUBBER STOP (ITEM 35) AND SHOULD ACHIEVE THE LOWER SUSPENSION LIMIT. ENSURE THAT THE AIR VALVE BRACKET (ITEM 29) DOES NOT MOVE AS VALVES ARE ACTUATED WHEN ITEM 22 MOVES THROUGH THE UPPER AND LOWER SUSPENSION LIMITS.



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-15-01-01**

Sandvik Underground Mining Flameproof Equipment

**SEAT SUSPENSION ASSEMBLY**
**04-15-01-01**
**BD00000844**
**LS151/ 171/ 191**
**REV. 7**

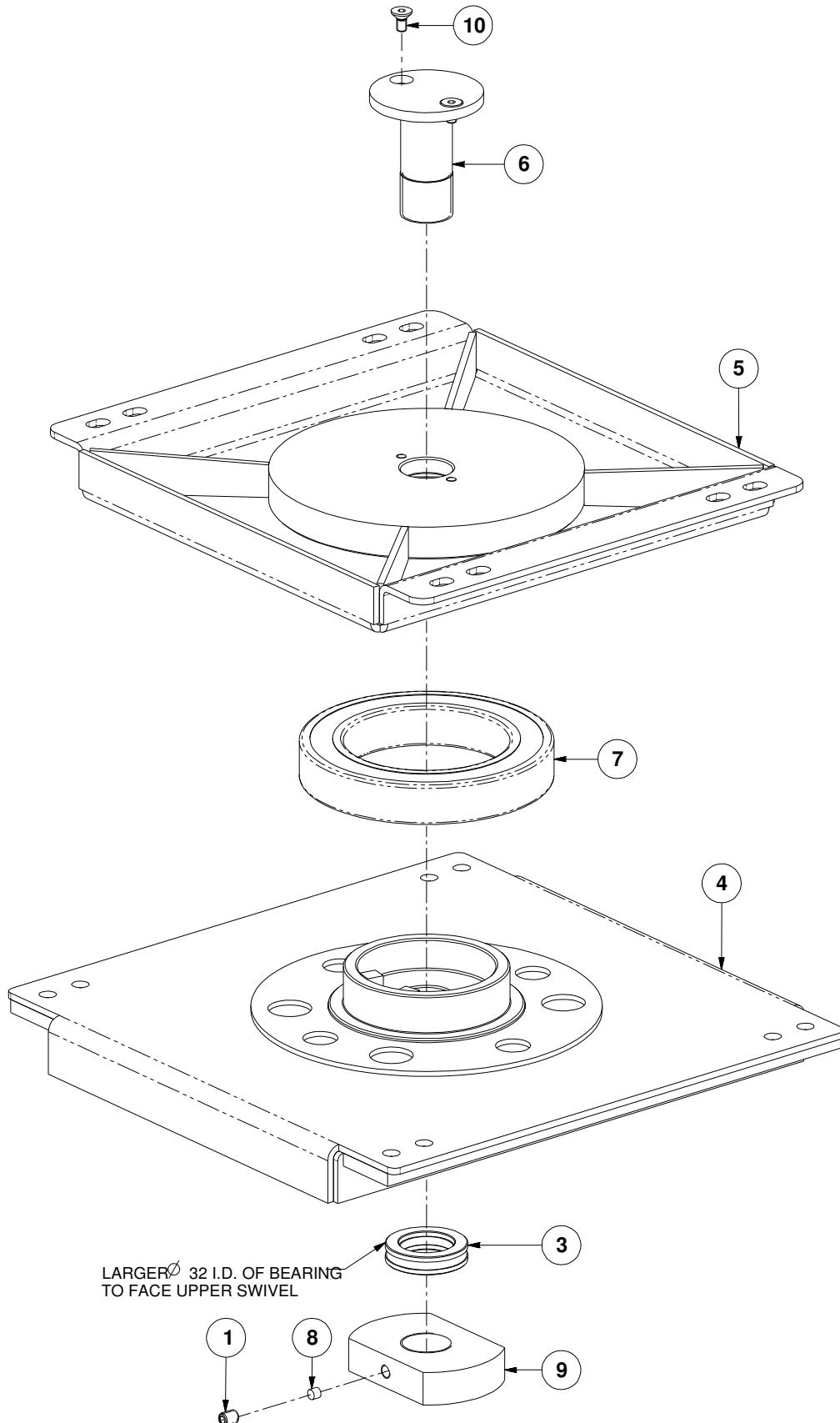
<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	445200845*	2		SHCS M12 X 35LG
2	445402810*	2		Bolt Hex Head, M10 x 60mm Long
3	445502656*	2		Bolt Hex Head, M6 x 16mm Long
4	445502755*	1		Bolt Hex Head, M8 x 16mm Long
5	445742655*	2		SHCS M6 X 16LG
6	450061619*	2		Washer, Flat, 12 mm
7	450062504*	4		Washer, Flat, 6 mm
8	450062506*	1		Washer, Flat, 8 mm
9	450062508*	2		Washer, Flat, 10 mm
10	450081116*	4		Washer, Spring, 6 mm
11	450081120*	1		Washer, Spring, 8 mm
12	455309036*	2		Hex Nut, M12 X 1.75
13	455669036*	4		Hex Nyloc Nut, M12 X 1.75
14	A2U220-244082	1		Bracket-restriction Indicator
15	A2U913-413007	2		Shock Absorber
16	A2U913-413011*	4		Washer, Flat, 12.5 I.D 30 O.D x 3 mm
17	A2U913-413014	1		AIRSPRING
18	A2U913-413044	4		Shock Absorber Bush
19	AFP1009-9	1		Air Silencer, 1/8" NPT
20	BD00000780	1		Air Valve
21	BD00000793	2		Stop Lug
22	BD00000800	1		Swivel Mount Weldment
23	BD00000818	1		Lever Arm Weldment
*	BD00001915	1		Fastener Kit
+	BD00002112	1		Fitting Kit
26	BD00004332	1		Seat Mount Weldment
27	BD00004864*	8		12 Dia x 25 Shoulder Screw
28	BD00005147	8		Bearing
29	BD00005898	1		Air Valve Bracket
30	BD00006262+	2		Adaptor Union 90, 1/8" BSPT x 6mm Tube, M/F
31	BD00006263+	1		Adaptor Union Straight, 1/8" BSPT x 6mm Tube, M/F
32	BD00006582	1		Flexible Tubing
33	BD00006583	1		Flexible Tubing
34	BD00006753	1		1/4" LOW PRESSURE HOSE, PUSH-ON
35	BD00007091	1		Buffer, Shore 40A
36	BD00007537	1		Lower Lever Arm Weldment
37	BD00021480	8		SPACER
38	BD00021985*	8		Washer, Flat, 12mm x 4mm
39	D16-0707+	1		Nipple, 1/8" NPT x 7/16" JIC
40	D605-0704+	2		HOSE END, LOW PRESSURE
41	DB15-0207+	1		Nipple, 1/8" BSPT x 7/16" JIC
42	T8PH16*	1		5/8-11 X 3" Hex Socket Flat Countersunk Head

BD00005233

**SWIVEL ASSEMBLY**

04-15-01-02

REV. 4



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 04-15-01-02

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

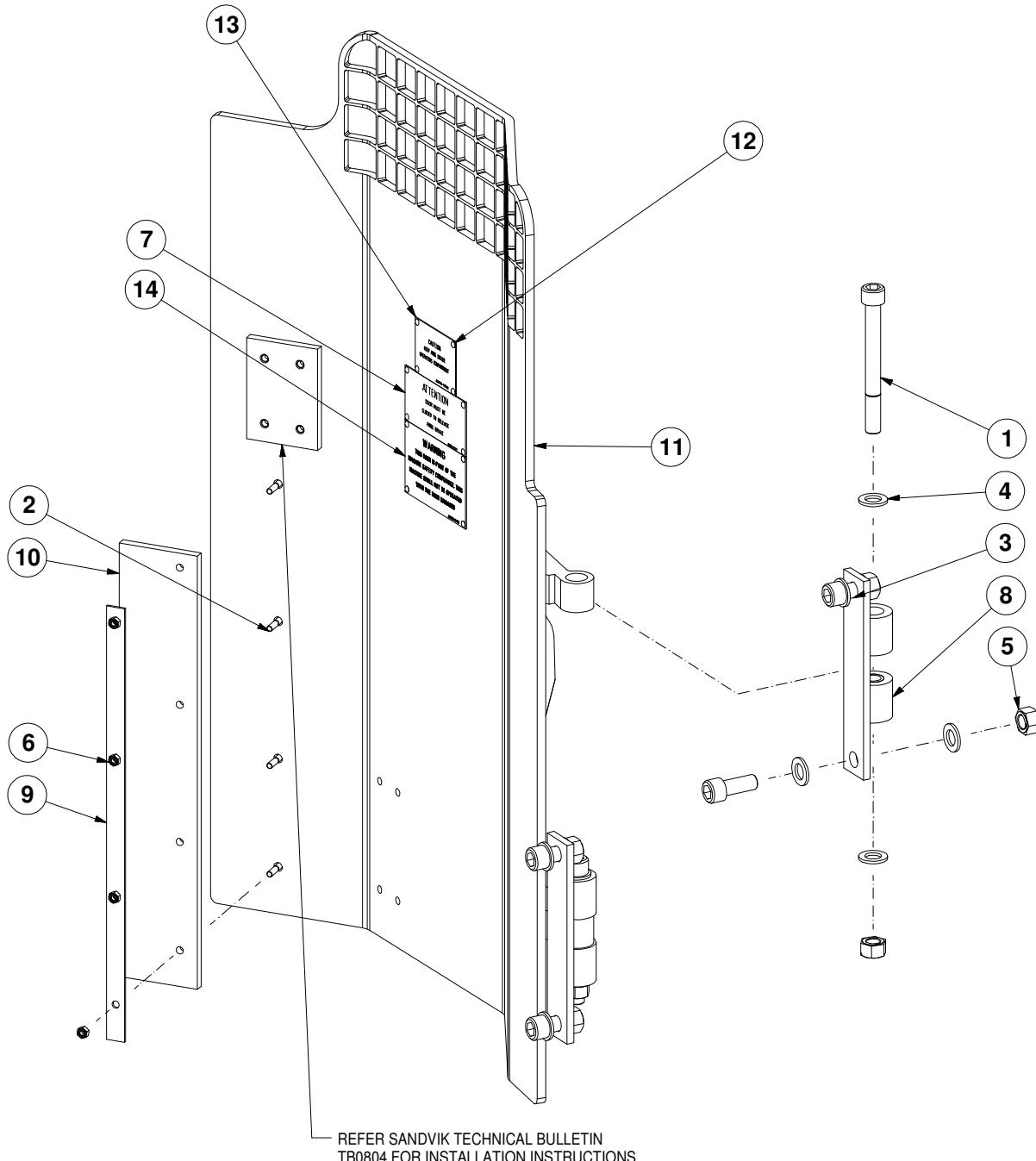
**BD00005233**

**SWIVEL ASSEMBLY**

**04-15-01-02**

**REV. 4**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BW01967508	1	1	Socket Set Screw, M8 X 1.25 X 10mm Long
2	BD00006323	1	1	Fastener Kit
3	BD00005460	1	1	Bearing
4	BD00005287	1	1	Lower Swivel Weldment
5	BD00005286	1	1	Upper Swivel Weldment
6	BD00005248	1	1	Swivel Pin
7	BD00005216	1	1	Bearing
8	BD00005051	1	1	Brass Insert
9	BD0000816	1	1	Swivel Nut
10	445800652	2	2	M6 x 12 C/Sunk SHCS

**A2U220-487081****CABIN DOOR****04-16****REV. 8**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-487081****CABIN DOOR****04-16****REV. 8**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445201089		2	Shcs M20 X 180Lg
2	445502766		4	Bolt Hex Head, M8 X 40Mm Long
3	445741071		4	Shcs M20 X 50Lg
4	450061624	12	Washer, Flat, 20 Mm	
5	455309044		6	Hex Nut, M20 X 2.5
6	455669030		4	Hex Nyloc Nut, M8 X 1.25
7	A2U130-171441		1	Nameplate, Door Close to Release Brake
8	A2U130-491132		2	Door Hinge, Weldment
9	A2U130-491134		1	Attachment Plate - Flexible Door Slam
10	A2U130-491175		1	Flexible Door Slam
11	A2U220-487089		1	Door, Drivers Compartment
12	A2U900-196175	12	DRIVE RIVET	
13	A2U921-171162		1	CAUTION NAMEPLATE
14	A2U921-171196		1	NAMEPLATE
**	TB0804	04-16-01		** Technical Bulletin **



## TECHNICAL BULLETIN

04-16-01

REV.



## Technical Bulletin

Sandvik Mining & Construction Tomago  
ABN 38 070 973 330  
Old Punt Road  
Tomago NSW 2322  
Australia  
Phone +61 2 4985 2625  
Fax +61 2 49852699

Bulletin Number: TB0804

Date: 22/01/2008

Subject: Cabin Door Retrofit

**Purpose**

To advise the industry of an improvement in the cabin door design for LS170 (ED7) and LS190 (ED10) Load Haul Dump Vehicles.

**Applicable to**

LS170 (formerly called ED7) and LS190 (formerly called ED10) LHD's.

**Description**

To minimise the potential for operators to rest their arms and hands adjacent to the articulation zone of the vehicles, the door profile on the LS170 (ED7) and LS190 (ED10) and hand holds have been revised. The revision increases the door height and repositions the hand hold.

**Changes**

Sandvik recommend owners of LS170 (ED7) LHD's and LS190 (ED10) LHD's are retrofitted with the revised doors and handhold arrangements as per the attached drawings:

LS170 (ED7) LHD Door Retrofit Drawing - A2U130-121223  
LS190 (ED10) LHD Door Retrofit Drawing - A2U220-121221

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-16-01**

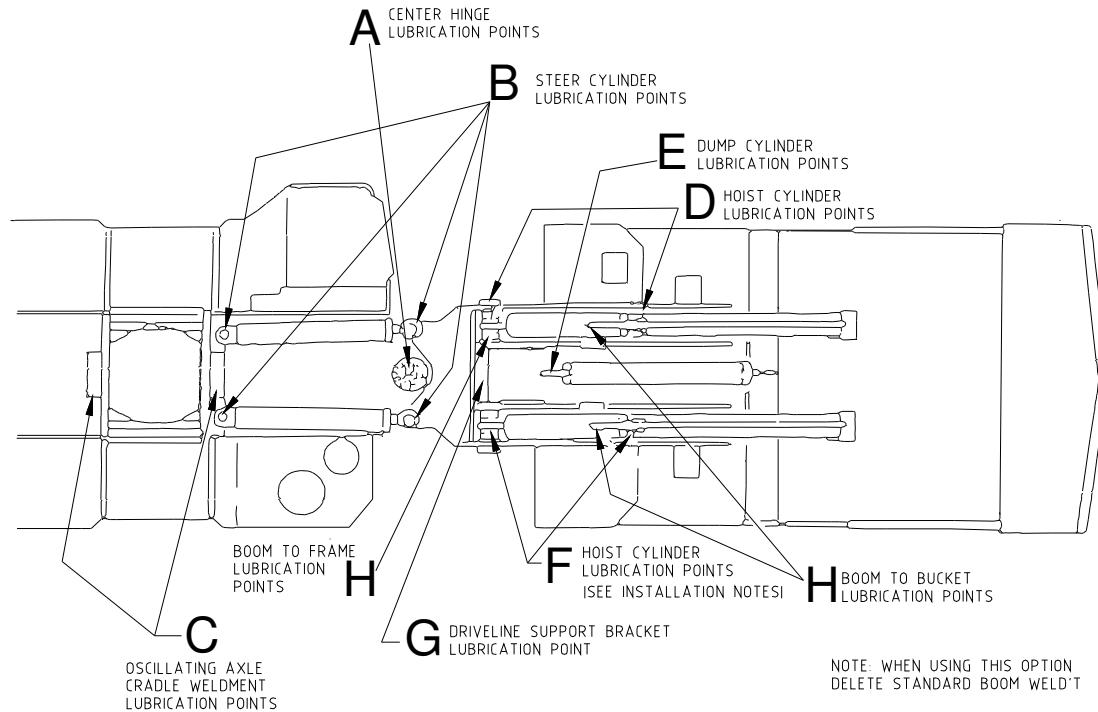
Sandvik Underground Mining Flameproof Equipment

**350-4320531**

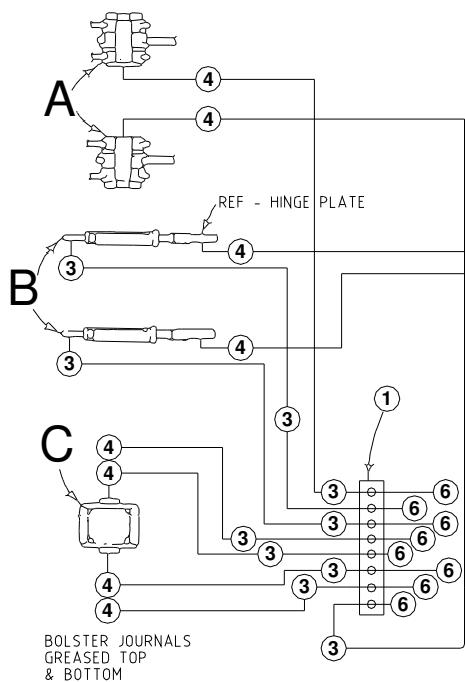
**CENTRAL LUBE GROUP**

**04-17**

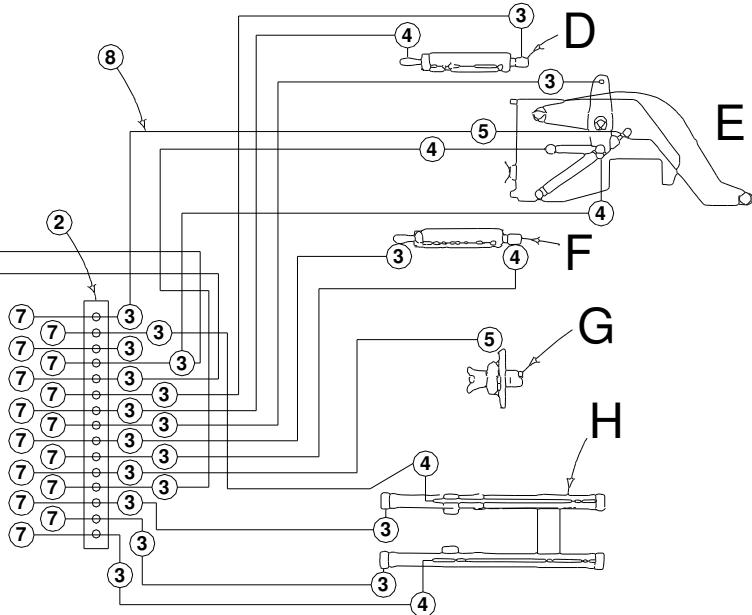
**REV. 6**



REAR FRAME LUBRICATION POINTS



FRONT FRAME LUBRICATION POINTS



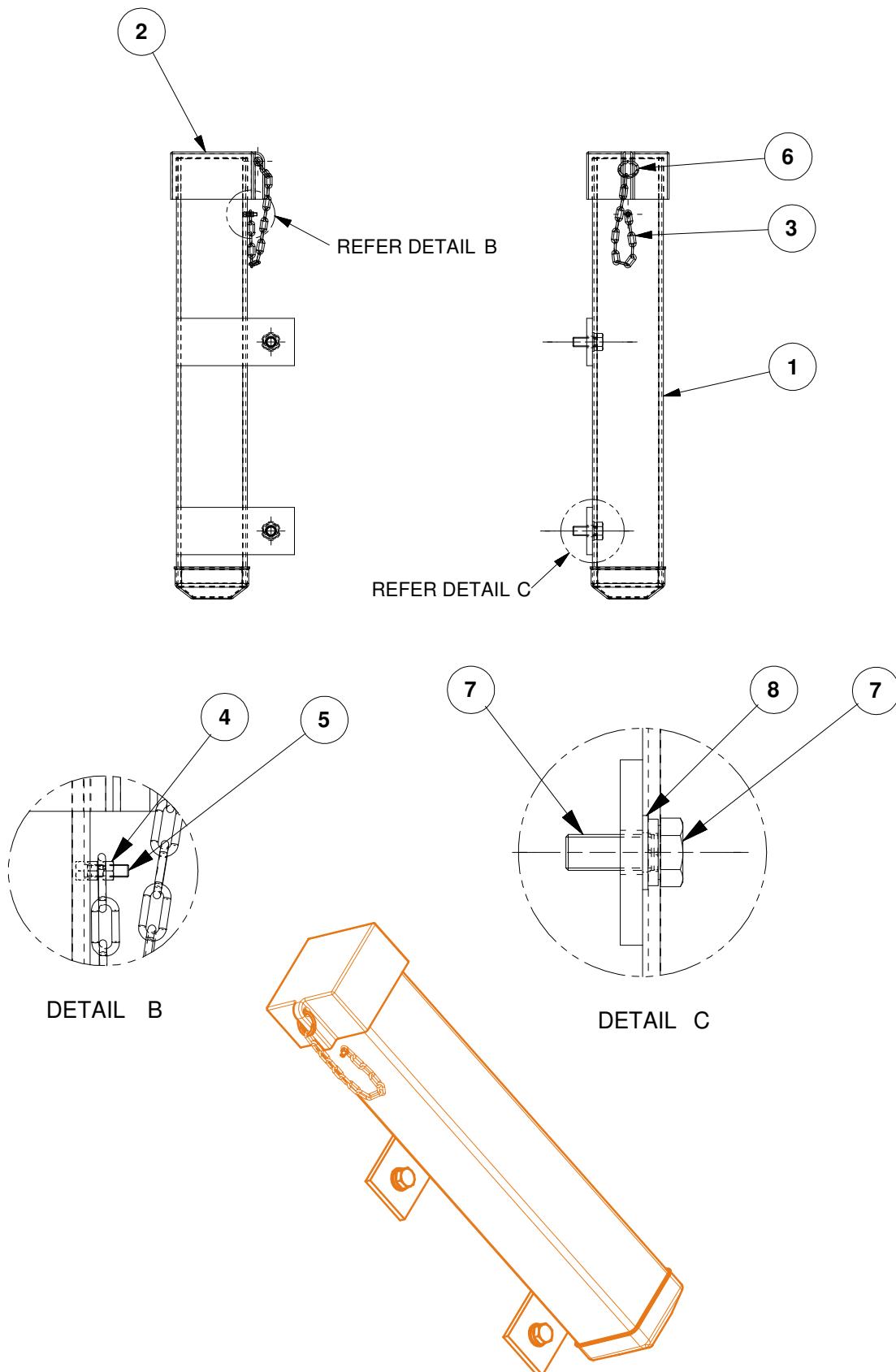
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-17**

**Sandvik Underground Mining Flameproof Equipment**

**350-4320531****CENTRAL LUBE GROUP****04-17****REV. 6**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U130-255294	1	1	MANIFOLD
2	A2U130-255220	1	1	BAR, LUBE MANIFOLD
3	D15-27	29	1	FITTING
4	D17-27	14	1	FITTING
5	D41-27	2	1	ELBOW
6	P1FG	8	1	GREASE NIPPLE
7	P1FGC	15	1	GREASE FITTING
8	A2U130-599417	1	1	HOSE KIT

**A2U900-190676****DOCUMENT TUBE LS170/ LS190****04-21****REV. 0**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U900-190676****DOCUMENT TUBE LS170/ LS190****04-21****REV. 0**

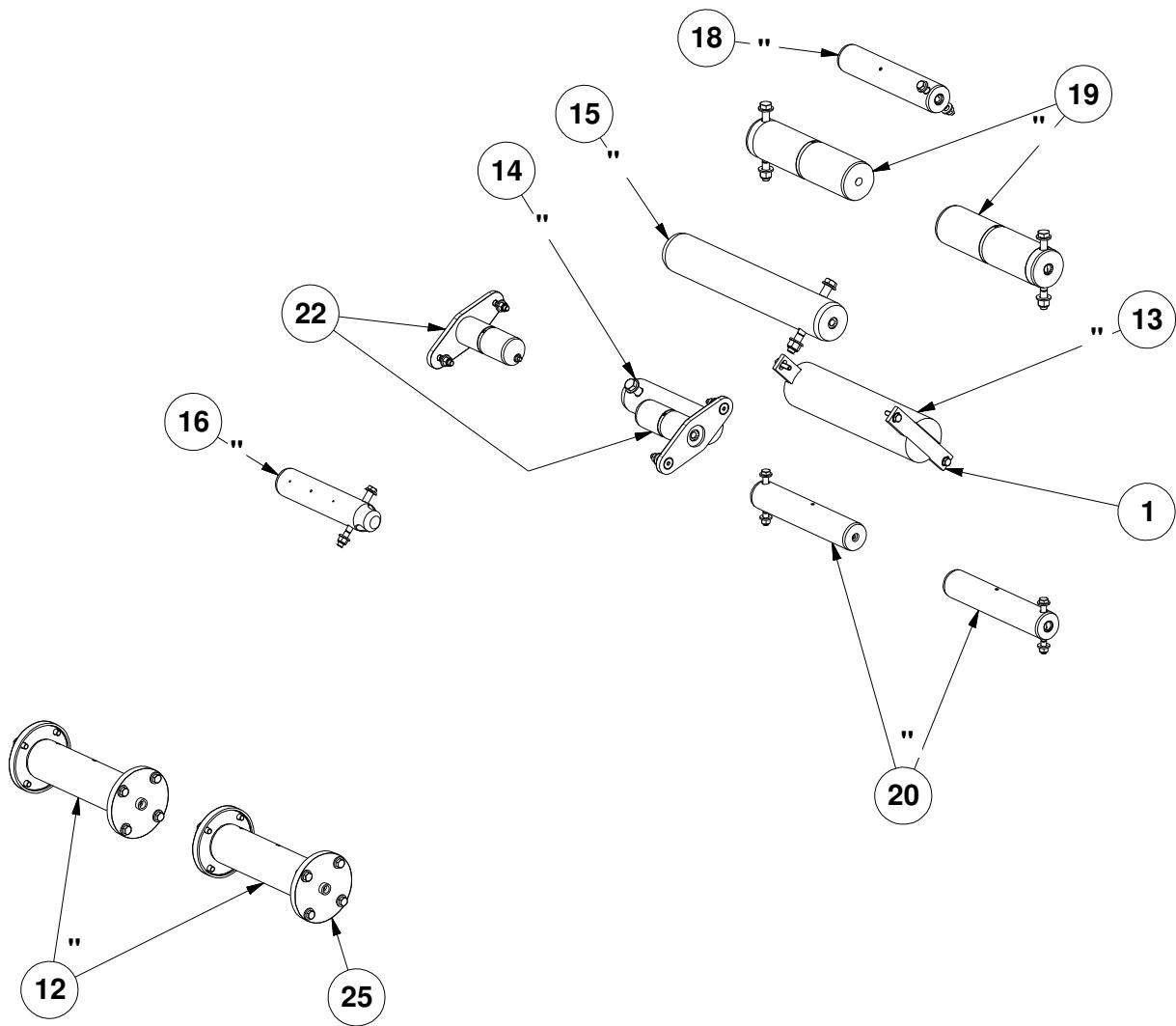
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-190678	1	1	Tube Assembly
2	A2U900-190680	1	1	Tube End Cover
3	A2U900-192137	1	1	Chain (13 Links)
4	BD00000273	2	1	M3 Std Hex. Nut
5	BD00000268	1	1	Set Screw M3
6	A2U900-192138	1	1	Chain Ring
7	445502801	2	2	Bolt Hex Head, M10 X 25Mm Long
8	450062508	2	2	Washer, Flat, 10 Mm
9	450081022	2	2	Washer, Spring, 10 Mm

BD00010199

**PIN GROUP, LS191**

04-45

REV. 1



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 04-45**

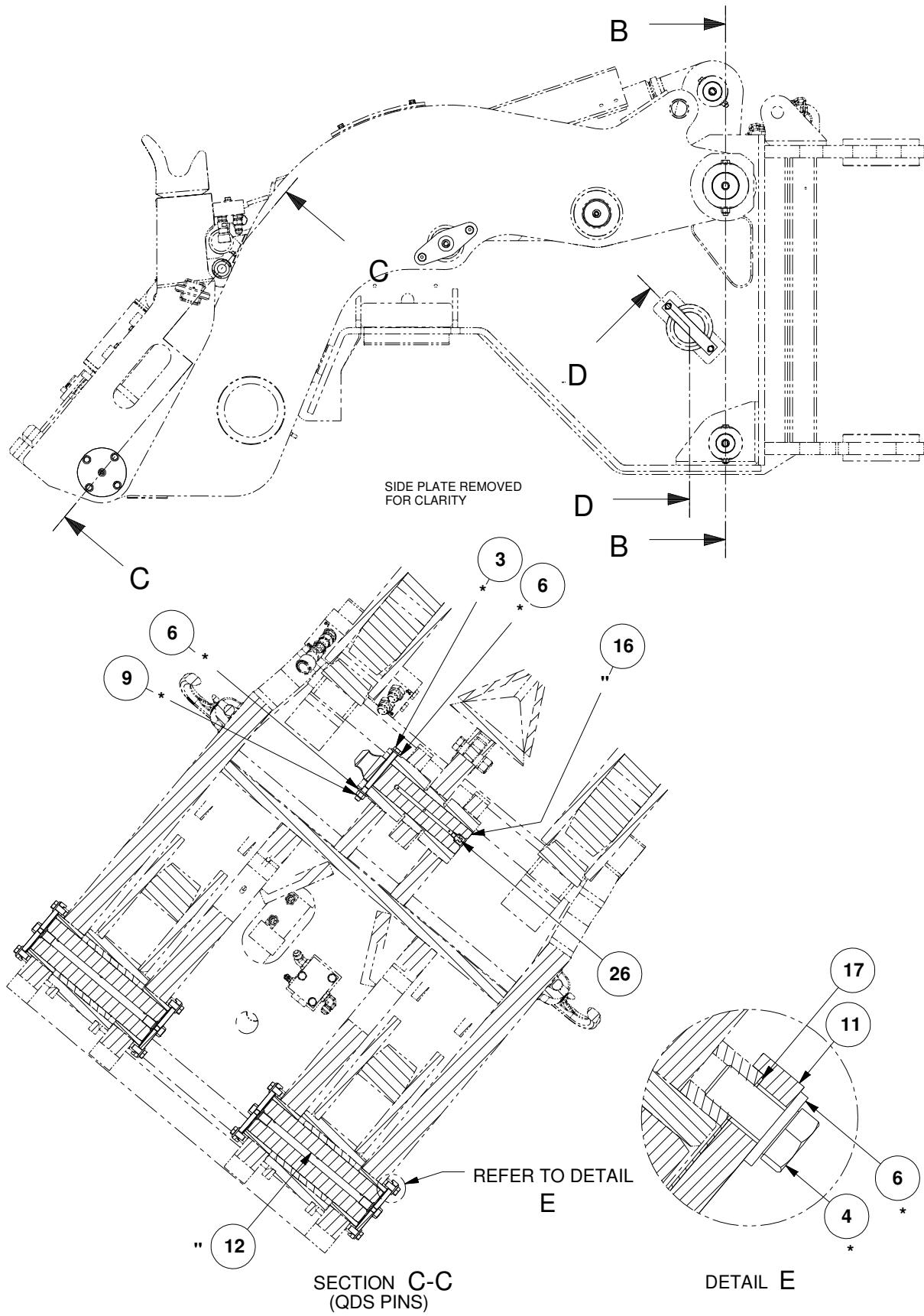
Sandvik Underground Mining Flameproof Equipment

**BD00010199**

**PIN GROUP, LS191**

**04-45**

**REV. 1**



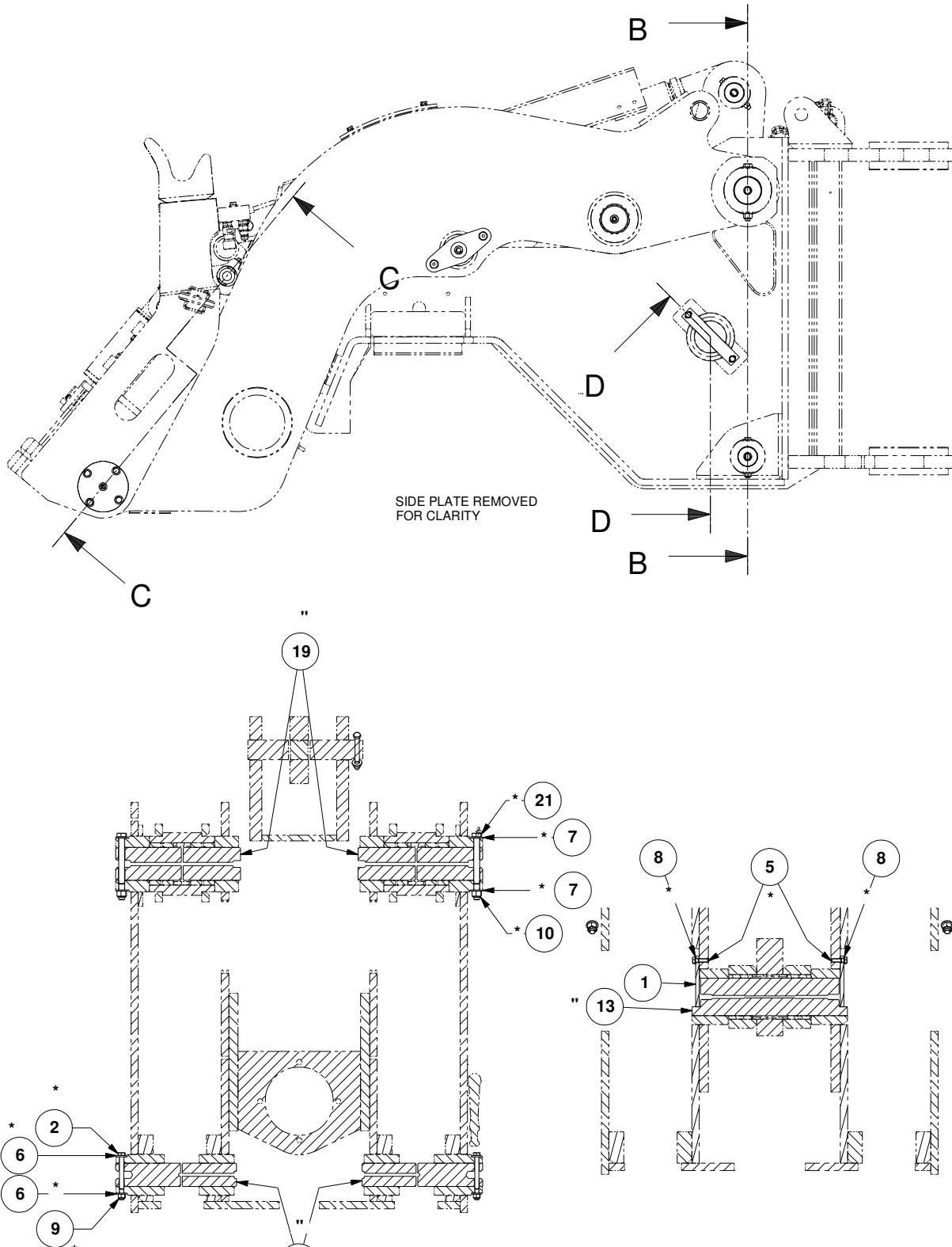
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**BD00010199**

**PIN GROUP, LS191**

**04-45**

**REV. 1**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-45**

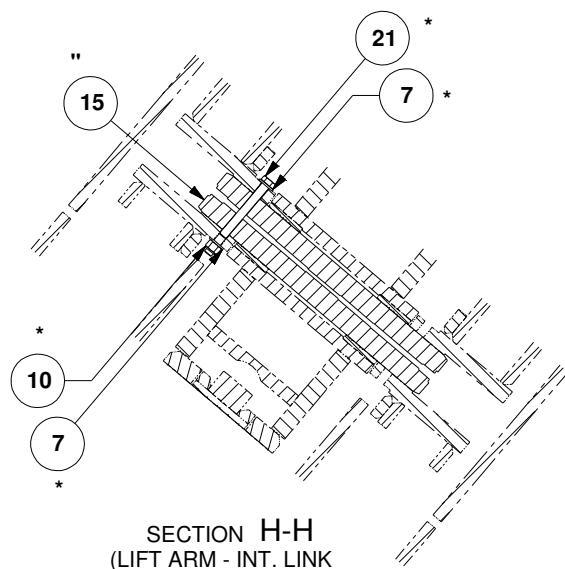
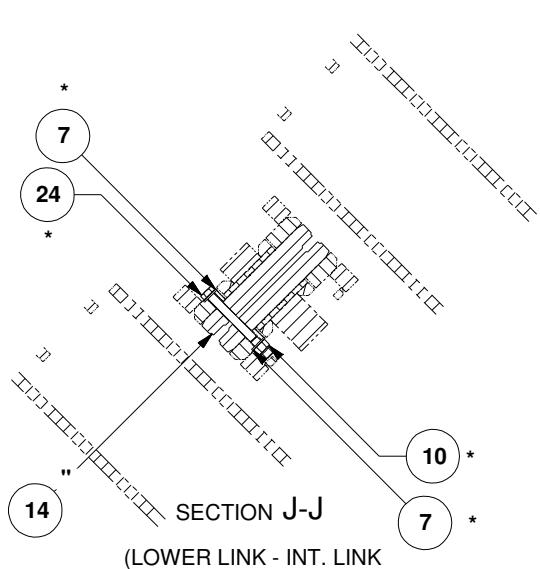
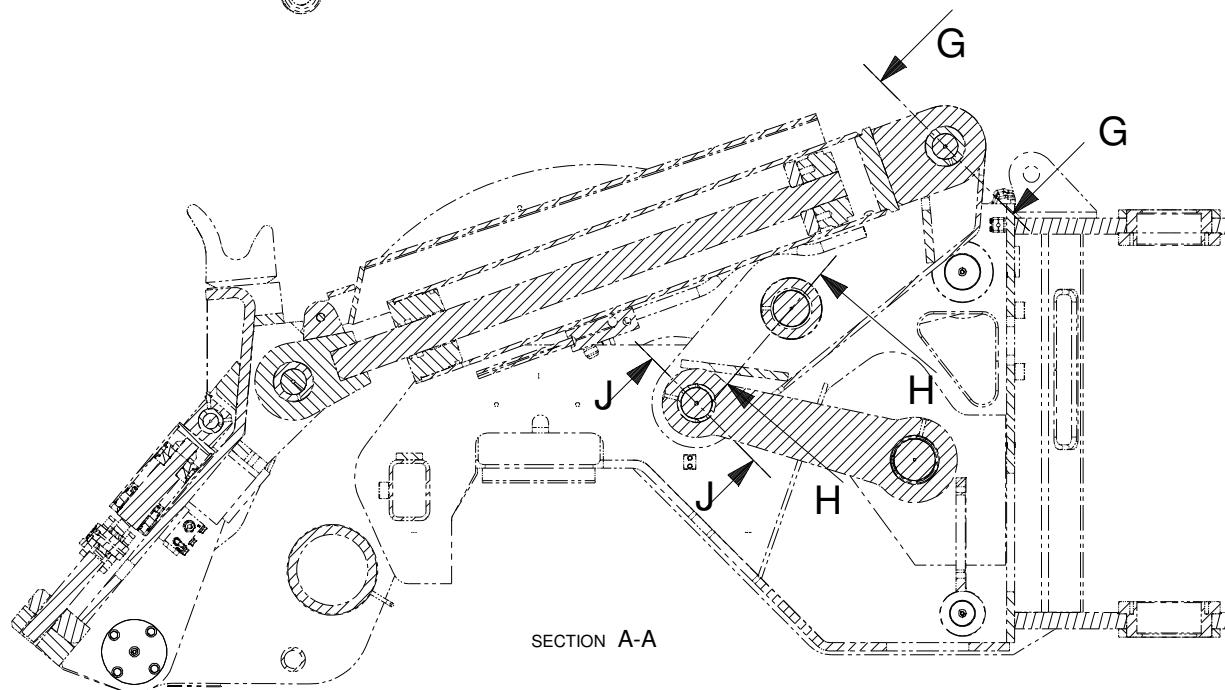
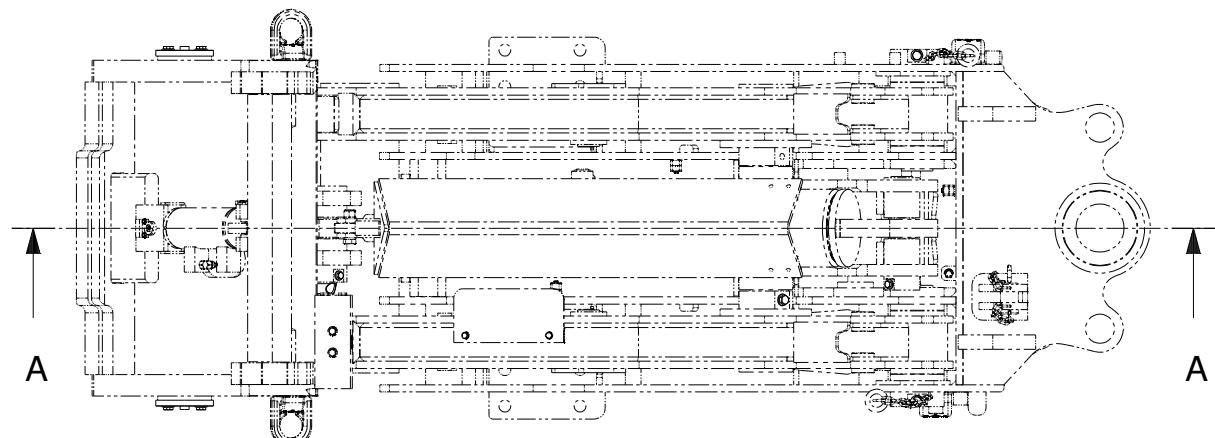
**Sandvik Underground Mining Flameproof Equipment**

**BD00010199**

**PIN GROUP, LS191**

**04-45**

**REV. 1**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-45**

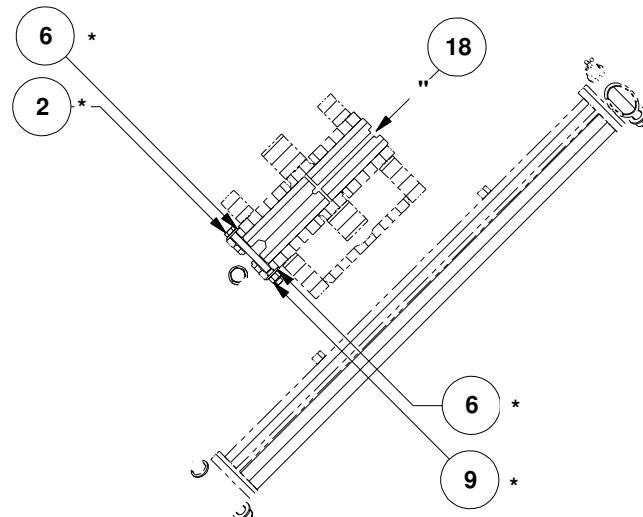
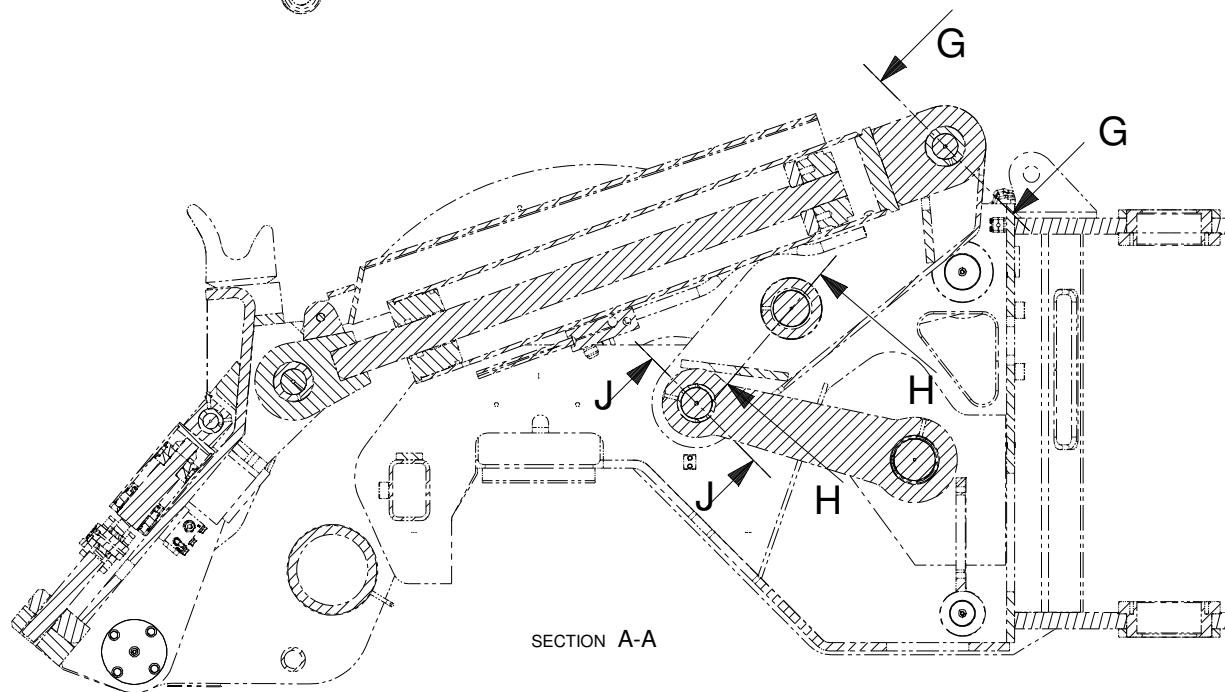
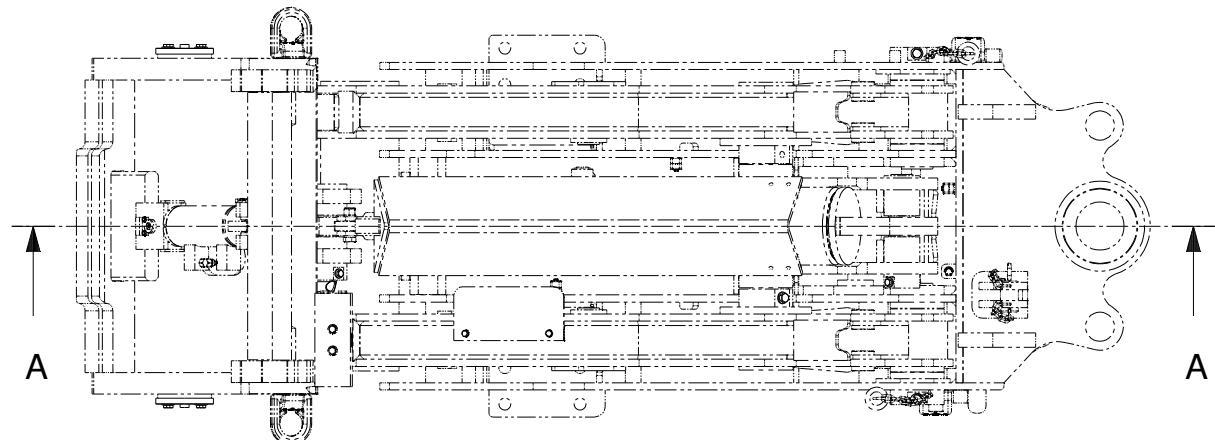
**Sandvik Underground Mining Flameproof Equipment**

**BD00010199**

**PIN GROUP, LS191**

**04-45**

**REV. 1**



**SECTION G-G**  
(INT. LINK - DUMP CYL.CONNECTION)

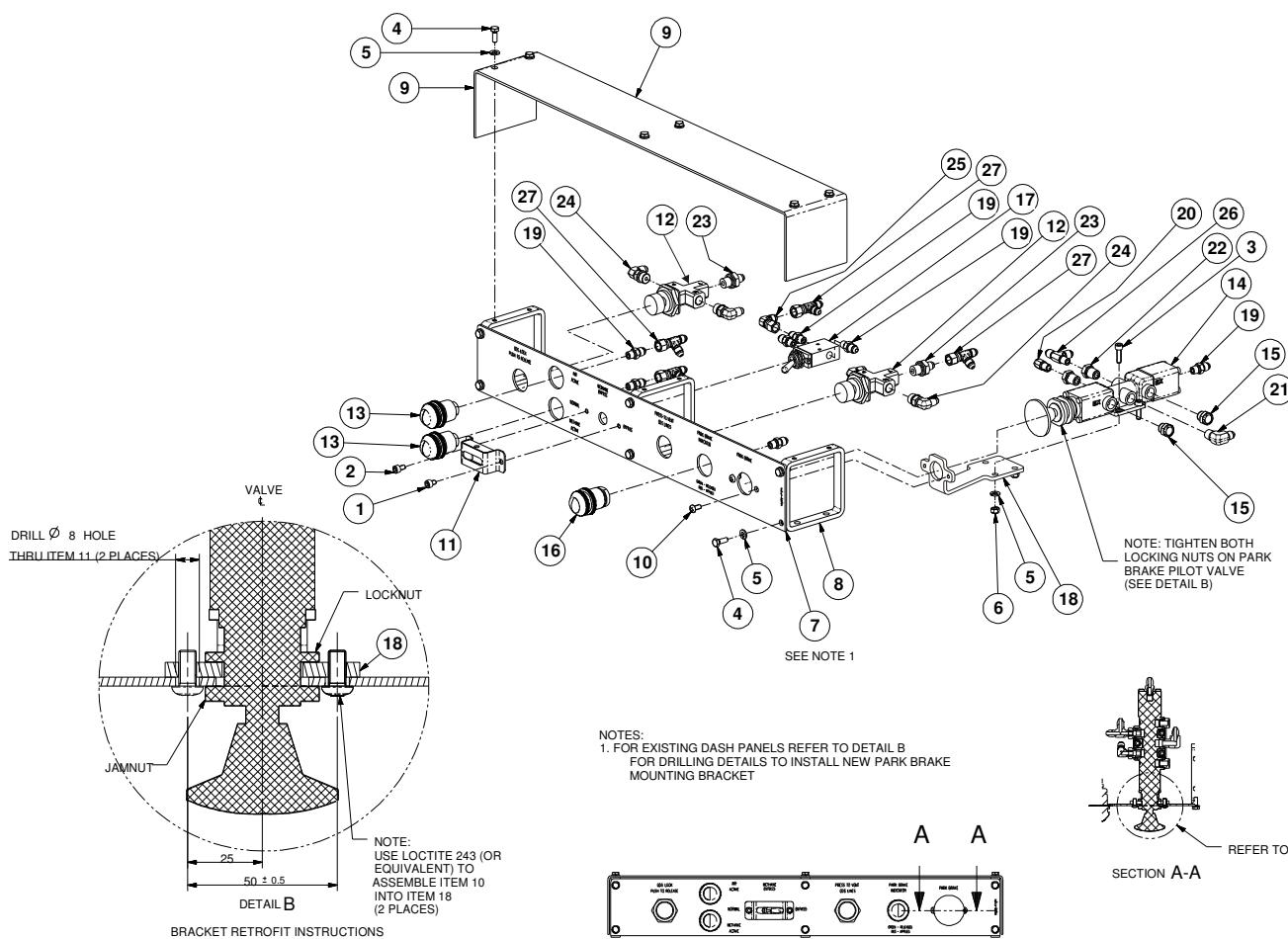
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 04-45**

**Sandvik Underground Mining Flameproof Equipment**

**BD00010199****PIN GROUP, LS191****04-45****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	234221	2	2	SUPPORT BAR
2	445402861*	3	3	Bolt Hex Head, M12 x 120mm Long
3	445402863*	1	1	Bolt Hex Head, M12 x 140mm Long
4	445502842*	16	16	Bolt Hex Head, M12 x 25mm Long
5	445512804*	4	4	Bolt Hex Head, M10 x 35mm Long
6	450061619*	28	28	Washer, Flat, 12 mm
7	450061622*	8	8	Washer, Flat, 16 mm
8	450062508*	4	4	Washer, Flat, 10 mm
9	455669036*	8	8	Hex Nyloc Nut, M12 X 1.75
10	455669040*	4	4	Hex Nyloc Nut, M16 X 2
11	A2U130-191417	4	4	End Cover, Pin Assembly
12	A2U130-193210"	2	2	PIN
13	A2U130-193431"	1	1	LOWER LINK PIVOT
14	A2U130-193432"	1	1	PIN LOWER LINK PIVOT
15	A2U130-193434"	1	1	INTER LINK PIVOT
16	A2U130-193435"	1	1	PIN - DUMP CYLINDER
17	A2U130-195063	4	4	END COVER
18	A2U220-193420"	1	1	Pin DIA 63.5 x 315 LG
19	A2U220-193445"	2	2	PIN - LIFT ARM MOUNT
20	A2U220-193446"	2	2	Pin DIA 63.5 x 327 LG
21	A2U900-196157*	3	3	Bolt Hex Head, M16 x 160mm Long
22	BD00002250"	2	2	Lift Cylinder Pin Weldment
"	BD00003570	1	1	Pin Kit
24	BD00003792*	1	1	Bolt Hex Head, M16 x 150mm Long
*	BD00010200	1	1	Fastener Kit
26	P1FG	3	3	GREASE NIPPLE 1/8"

**A2U220-450061**
**PARK BRK.- DASH GRP. LS170/ 190**
**04-55**
**REV. 4**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 04-55**
**Sandvik Underground Mining Flameproof Equipment**

**A2U220-450061****PARK BRK.- DASH GRP. LS170/ 190****04-55****REV. 4**

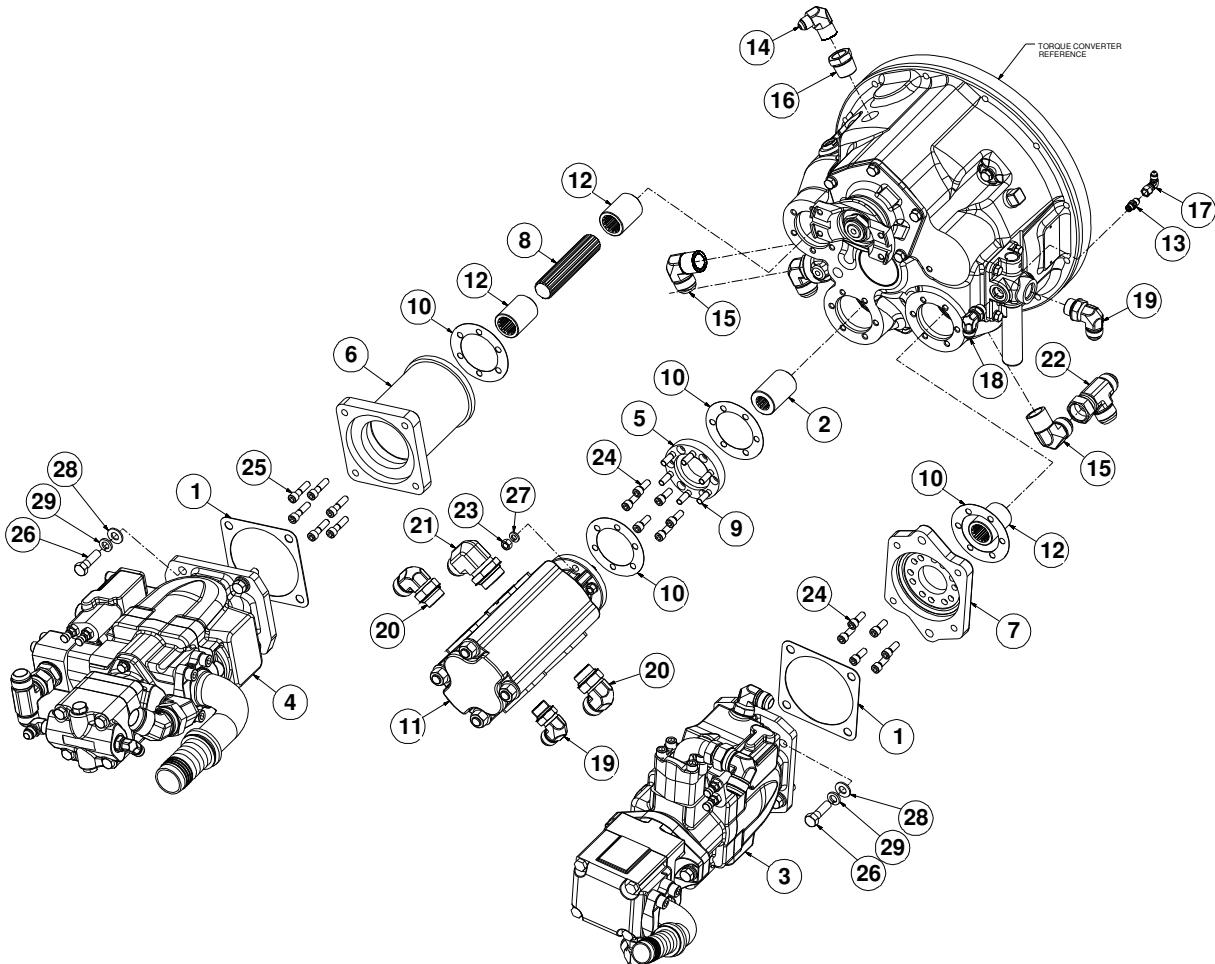
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	443004650		1	SHCS M6 X 8LG
2	443004651		1	SHCS M6 X 10LG
3	445208660		3	SHCS M6 X 20LG
4	445502656		12	Bolt Hex Head, M6 x 16mm Long
5	450081116		15	Washer, Spring, 6 mm
6	455669026		3	Hex Nyloc Nut, M6 X 1
7	A2U220-471074		1	Dash Panel
8	A2U220-491241		3	BRACKET - MOUNTING
9	A2U220-491242		1	Top Cover Plate
10	A2U900-196299		2	Hex Soc PHCS, M6x1x12mm Lg
11	A2U900-471093		1	COVER, DASH PANEL
12	A2U900-594393		2	Gauge Isolator Valve
13	A2U900-690018		2	Lens Indicator
14	A2U900-694064	04-13-01	1	Park Brake Pilot Valve
15	A2U900-694078		2	AIR SILENCER
16	A2U936-690011		1	LENS INDICATOR
17	AFP1006-5		1	ON / OFF Toggle Switch
18	BD00012626		1	Park Brake Valve Mount
19	D15-0207		7	Nipple, 1/8" NPT x 7/16" JIC
20	D17-0207		1	Elbow 90, 1/8" NPT x 7/16" JIC M/M
21	D17-0407		1	Elbow 90, 1/4" NPT x 7/16" JIC M/M
22	D21-0402		2	Reducing Bush, 1/4" NPT x 1/8" NPT
23	D256-0407		2	NIPPLE, 1/4" BSPP O-Ring x 7/16" JIC
24	D257-0407		4	Elbow 90, 1/4" BSPP x 7/16" JIC M/M
25	D50-0707		1	Adaptor Union 90, 7/16" JIC x 7/16" JIC M/F
26	D74-020707		1	TEE, 1/8" NPT x 7/16" JIC x 7/16" JIC
27	DA82-070707		4	Tee, 7/16" JIC x 7/16" JIC x 7/16" JIC F/M/M

**HYDRAULIC SYSTEMS**

05-00

**REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	A2U220-510051	05-01		HYDRAULIC PUMP GROUP
	BD00001577	05-02		HYDRAULIC FILL PUMP GROUP LS191
	A2U220-510038	05-03		PUMP & MOUNTING GROUP (FAN DRIVE)
	A2U220-542029	05-04		CONTROL GROUP, STEERING
	A2U220-544048	05-05		CONTROL GROUP, BUCKET
	A2U220-545031	05-07		LINES GROUP, QDS
	A2U220-540067	05-08		LINES GROUP, REAR SUCTION
	A2U220-544036	05-10		LINES GROUP, PTO
	A2U220-330043	05-11		LINES GROUP, TRANSMISSION
	A2U220-540043	05-13		LINES GROUP, ALT & FAN DRIVE
	A2U220-540066	05-13		LINES GROUP, ALT & FAN DRIVE
	A2U220-543051	05-14		LINES GROUP, BRAKE
	A2U220-550088	05-15		CYLINDER GROUP, LS190/ 191 DUMP
	BD00006965	05-16		LIFT CYLINDER GROUP LS171/ 191
	A2U220-550072	05-17		STEERING CYLINDER GROUP LS190/191
	A2U900-318004	05-19-01		HYDRAULIC OIL COOLER
	A2U220-530038	05-19		HYDRAULIC TANK GROUP
	A2U220-450055	05-24-01		BRAKE PEDAL GROUP
	A2U220-590154	05-26		BRAKE/STEERING MANIFOLD GROUP - PARKER
	A2U220-501338	05-28		HYDRAULIC SCHEMATIC, HYDRAULIC ASSIST TRAILER
	A2U900-501364	05-28		TRANSMISSION CIRCUIT WITH HYD. ASSIST TRAILER
	A2U220-590097	05-29		TRAILER/ WINCH CONTROL GROUP
	BD00019267	05-32		TRAILER HYDRAULIC OPTION LS190/ 191
	BD00003122	05-33		CYLINDER KIT LS190/ 191
	BD00008799	05-35		LINES GROUP, SYSTEM 20 LS190

**A2U220-510051****HYDRAULIC PUMP GROUP****05-01****REV. 1**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-01**

Sandvik Underground Mining Flameproof Equipment

**A2U220-510051**
**HYDRAULIC PUMP GROUP**
**05-01**
**REV. 1**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	64804381		2	GASKET SAE C - 4 BOLT MOUNT
2	A2U220-331062		1	COUPLING SAE B SPLINE - SAE C SPLINE
3	A2U220-510052	05-01-01	1	DRIVER SIDE PUMPS
4	A2U220-510053	05-01-02	1	OFF DRIVER SIDE PUMPS
5	A2U220-511064		1	ADAPTOR DIA 110 BAR X 24 LG
6	A2U220-511066		1	CONVERTER - PUMP SPACER
7	A2U220-511067		1	END GLAND MODIFICATION
8	A2U220-511073		1	SPLINE SAE C SPLINE
9	CL207758		6	STUD 3/8" UNC - 3/8" UNF x 1 3/4" LG
10	BD00003241		4	GASKET SAE C - 6 BOLT MOUNT
11	900-3088069		1	CHARGE PUMP
12	CL801346		3	THRU DRIVE COUPLING SAE B SPLINE
13	D15-0207		1	NIPPLE 1/8" NPT x 7/16" JIC
14	D17-1212		1	ELBOW 90, 3/4" NPT x 3/4" JIC M/M
15	D17-1621		2	ELBOW 90, 1" NPT x 1 5/16" JIC M/M
16	D21-1612		1	REDUCING BUSH 1" NPT x 3/4" NPT M/F
17	D50-0707		1	ELBOW 90, 7/16" JIC x 7/16" JIC M/F
18	D53-1212		1	ELBOW 90, 3/4" UNO_RING x 3/4" JIC M/M
19	D53-1717		2	ELBOW 90, 1 1/16" UNO_RING x 1 1/16" JIC M/M
20	D53-2121		3	ELBOW 90, 1 5/16" UNO_RING x 1 5/16" JIC M/M
21	D53-2621		1	ELBOW 90, 1 5/8" UNO_RING x 1 5/16" JIC M/M
22	DA82-212121		1	TEE 1 5/16" JIC x 1 5/16" JIC M/M/F
23	T6HG		6	NUT, HEX 3/8" - 24 UNF
24	T6VH16		12	CAPSCREW, HEX HD 3/8-16 x 1"
25	T6VH24		6	CAPSCREW, HEX HD 3/8-16 x 1 1/2
26	T8GG28		8	BOLT, HEX HD 1/2-13 x 1 3/4



## PARTS MANUAL

A2U220-510051

### HYDRAULIC PUMP GROUP

05-01

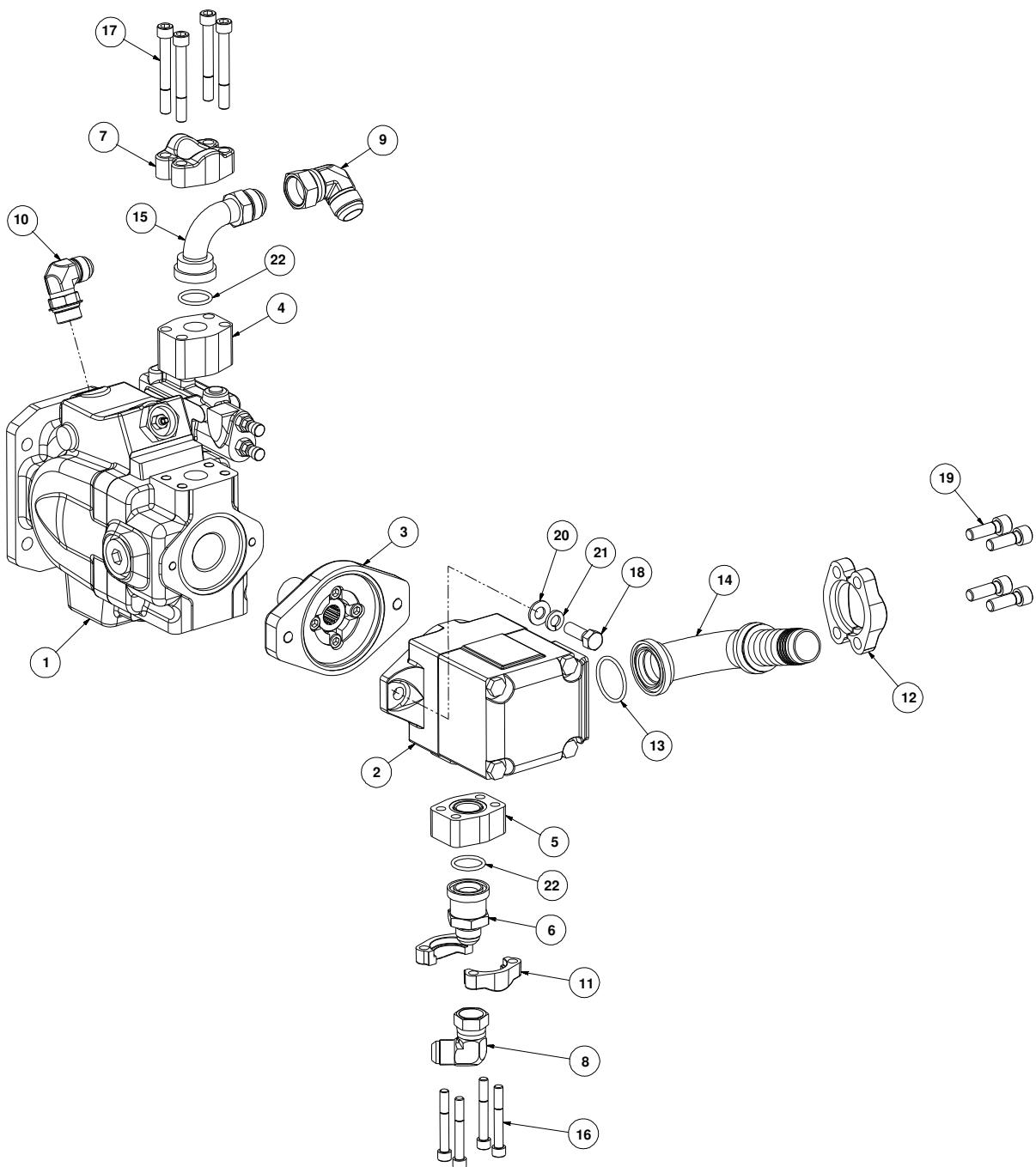
REV. 1

ITEM	PART NO	PAGE	QTY	DESCRIPTION
27	W6GF	6	1	WASHER, SPRING 3/8 DIA
28	W8GA	8	1	WASHER, NARROW 1/2 DIA
29	28GF	8	1	WASHER, SPRING 1/2 DIA

A2U220-510052 HYDRAULIC PUMPS - DRIVERS SIDE

05-01-01

REV. 1



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

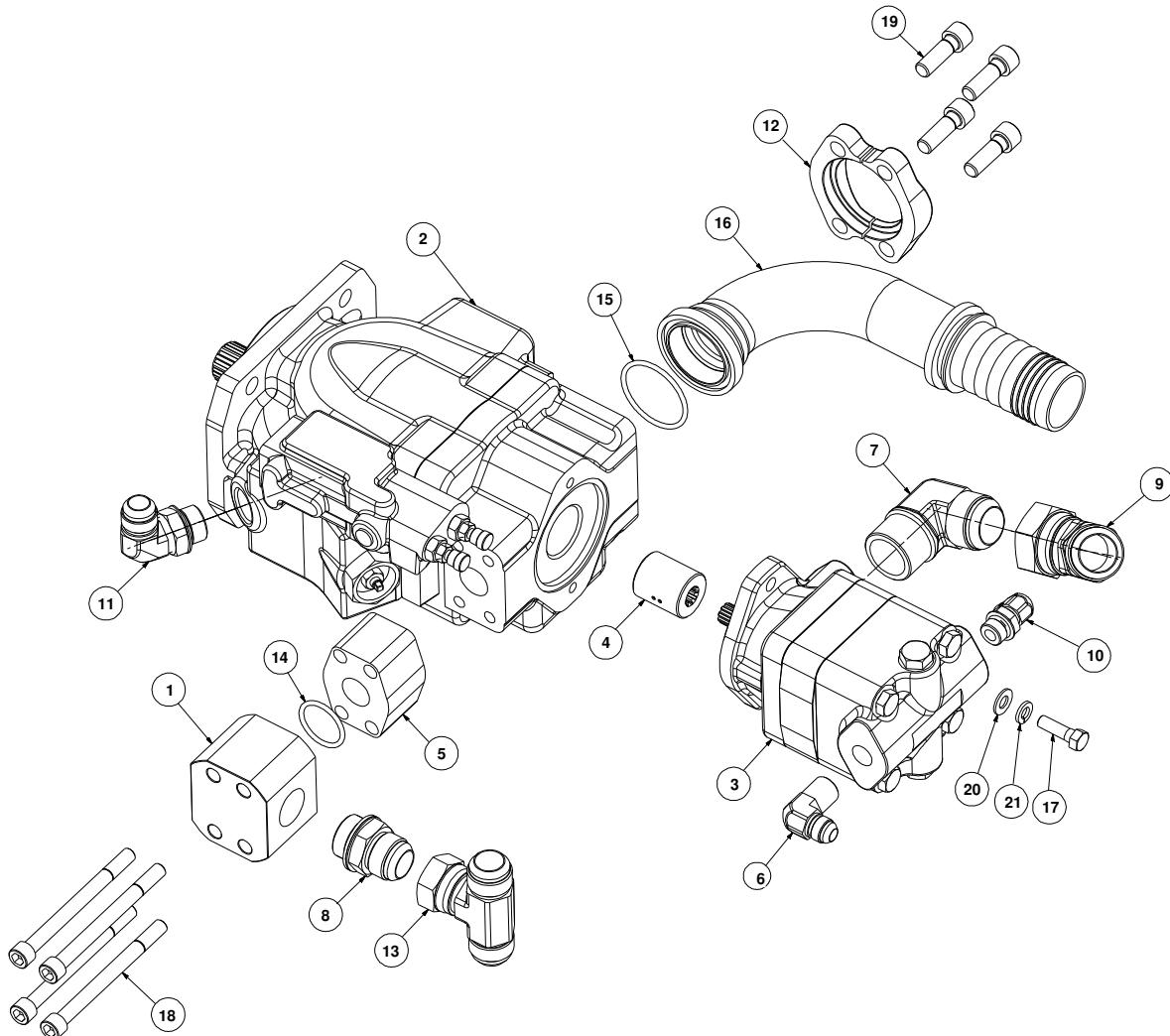
SECTION 05-01-01

Sandvik Underground Mining Flameproof Equipment

A2U220-510052    HYDRAULIC PUMPS - DRIVERS SIDE    05-01-01

REV. 1

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-511074	1	1	PRESSURE COMPENSATED BUCKET PUMP
2	A2U900-511075	1	1	BRAKE/STEERING VANE PUMP
3	A2U900-511078	1	1	THRU DRIVE KIT SAE C - SAE B
4	A2U900-594548	1	1	CHECK VALVE PRESSURE COMP
5	A2U900-594555	1	1	CHECK VALVE
6	D188-1716	1	1	ADAPTOR SAE 1" CODE 61 FLANGE x 1 1/16" JIC
7	D206-16	2	1	SPLIT FLANGE CLAMP SAE 1" CODE 62
8	D50-1717	1	1	ELBOW 90, 1 1/16" JIC x 1 1/16" JIC M/F
9	D50-2121	1	1	ADAPTOR UNION 90, 1 5/16" JIC x 1 5/16" JIC M/F
10	D53-1717	1	1	ELBOW 90, 1 1/16" UNO_RING x 1 1/16" JIC M/M
11	D90-16	2	1	SPLIT FLANGE CLAMP SAE 1" CODE 61
12	D90-24	2	1	SPLIT FLANGE CLAMP SAE 1 1/2" CODE 61
13	DR524	1	1	O_RING SAE 1 1/2"
14	DSK13-2424	1	1	SWAGED HOSE FITTING SAE 1 1/2" CODE 61 FLANGE
15	FF5540-1616S	1	1	90 DEG BEND SAE 1" CODE 61 FLANGE x 1 5/16" JIC
16	T6VH44	4	1	CAPSCREW, HEX HD 3/8-16 x 2 3/4
17	T7VH56	4	1	CAPSCREW, HEX HD 7/16-14 x 3 1/2
18	T8GG24	2	1	BOLT, HEX HD 1/2-13 x 1 1/2
19	T8VH24	4	1	CAPSCREW, HEX HD 1/2-13 x 1 1/2
20	W8GA	2	1	WASHER, FLAT 1/2 DIA NARROW
21	W8GF	2	1	WASHER, SPRING 1/2 DIA
22	DR516	2	1	O_RING 1" SAE

**A2U220-510053****HYDRAULIC PUMPS - OFF DRIVERS  
SIDE****05-01-02****REV. 1**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-01-02**

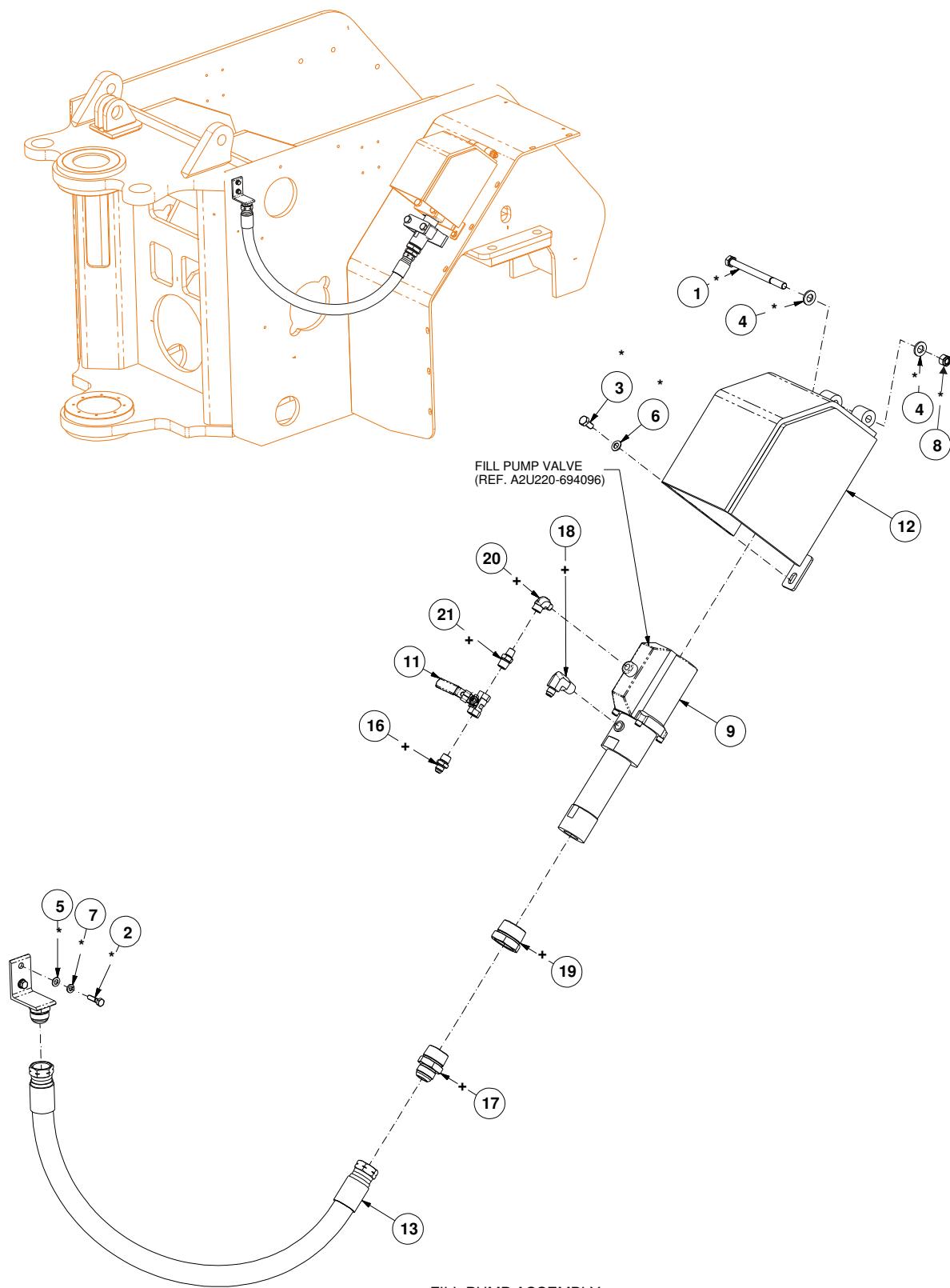
Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****HYDRAULIC PUMPS - OFF DRIVERS**

05-01-02

**A2U220-510053****SIDE****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2EFBF1616	1	1	FLANGE, SAE 1" CODE 62 SIDE PORT 1" BSP
2	A2U900-511074	1	1	PRESSURE COMPENSATED BUCKET PUMP
3	A2U900-511076	1	1	ALTERNATOR PUMP
4	A2U900-511077	1	1	THRU DRIVE KIT SAE C - SAE B
5	A2U900-594548	1	1	CHECK VALVE PRESSURE COMP
6	D17-0812	1	1	ELBOW 90, 1/2" NPT x 3/4" JIC M/M
7	D17-2026	1	1	ELBOW 90, 1 1/4" NPT x 1 5/8" JIC M/M
8	D256-1621	1	1	NIPPLE 1" BSPP 0_RING x 1 5/16" JIC
9	D51-2626	1	1	ADAPTOR UNION 45, 1 5/8" JIC 1 5/8" JIC M/F
10	D53-1212	1	1	ELBOW 90, 3/4" UNO_RING x 3/4" JIC M/M
11	D53-1717	1	1	ELBOW 90, 1 1/16" UNO_RING x 1 1/16" JIC M/M
12	D90-32	2	1	FLANGE CLAMP SAE 2" DIA CODE 61
13	DA81-212121	1	1	TEE 1 5/16" JIC x 1 5/16" JIC
14	DR520	1	1	0_RING 1 1/4" SAE
15	DR-532	1	1	0_RING 2" SAE
16	A6SIC3232	1	1	SWAGED HOSE FITTING SAE 2" CODE 61 FLANGE
17	T6GG20	2	1	BOLT, HEX HD 3/8-16 x 1 1/4
18	T7VH80	4	1	CAPSCREW, HEX HD 7/16-14 x 5"
19	T8VH24	4	1	CAPSCREW, HEX HD 1/2-13 1 1/2
20	W6GA	2	1	WASHER, FLAT 3/8 DIA NARROW
21	W6GF	2	1	WASHER, SPRING 3/8 DIA

**BD00001577**
**HYDRAULIC OIL FILL PUMP GRP.  
LS191**
**05-02**
**REV. 0**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 05-02**
**Sandvik Underground Mining Flameproof Equipment**

**HYDRAULIC OIL FILL PUMP GRP.  
LS191**

05-02

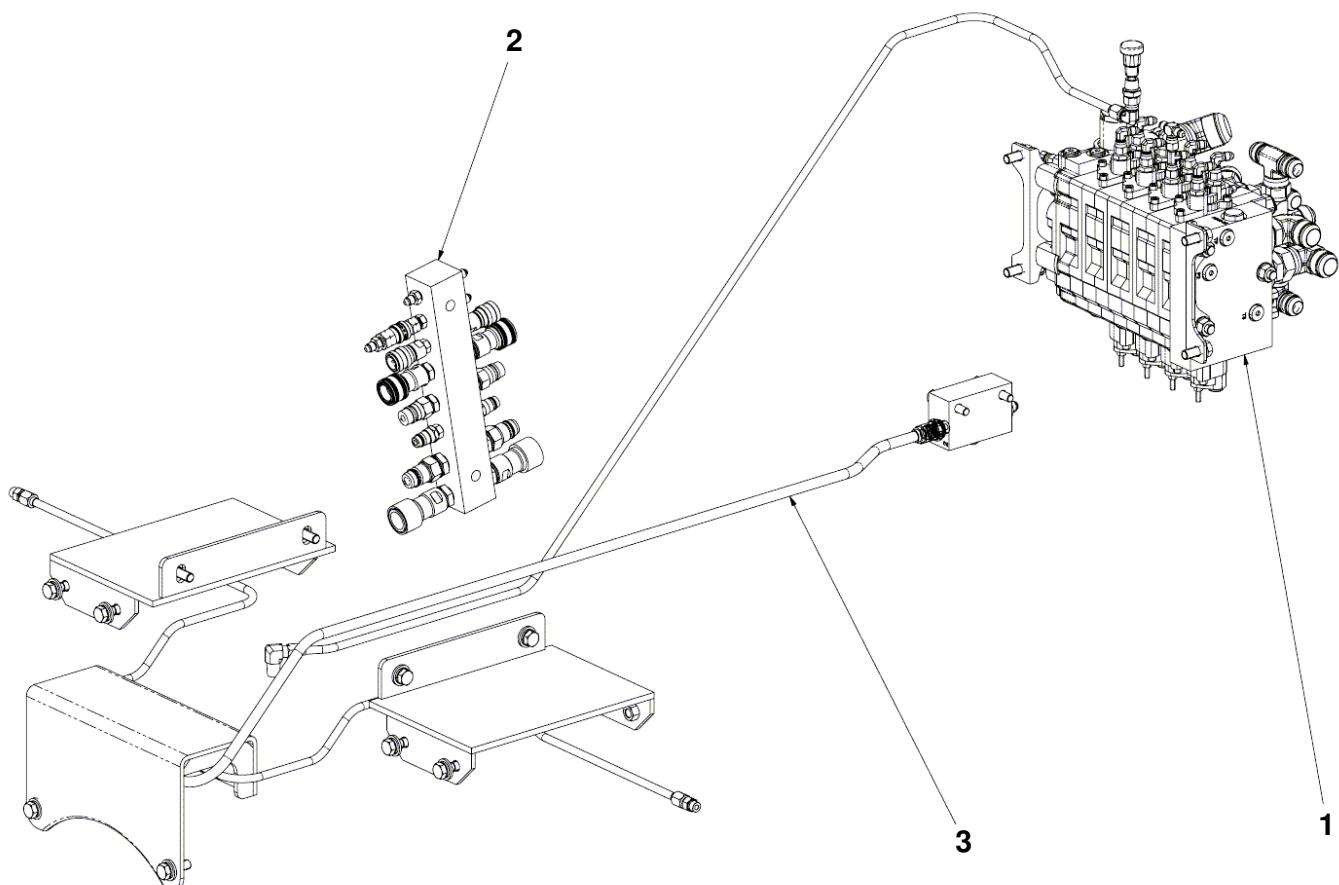
**BD00001577****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402864*	1	1	Bolt Hex Head, M12 x 150mm Long
2	445502762*	2	2	Bolt Hex Head, M8 x 30mm Long
3	445502799*	1	1	Bolt Hex Head, M10 x 20mm Long
4	450061619*	2	2	Washer, Flat, 12 mm
5	450062506*	2	2	Washer, Flat, 8 mm
6	450062508*	1	1	Washer, Flat, 10 mm
7	450081120*	2	2	Washer, Spring, 8 mm
8	455669036*	1	1	Hex Nyloc Nut, M12 X 1.75
9	A2U220-511062	1	1	PUMP OIL FILL HYD/AIR
10	A2U220-591429	1	1	MOUNT-HOSE, OIL FILL PUMP
11	A2U900-694047	1	1	3/8" BSP BALL VALVE
12	BD00001579	1	1	Hydraulic Fill Pump Cover
13	BD00004040	1	1	Hose Kit
*	BD00010485	1	1	FASTENER KIT
+	BD00010486	1	1	FITTING KIT
16	D15-0609+	1	1	Nipple, 3/8" NPT x 9/16" JIC
17	D15-2021+	1	1	Nipple, 1" NPT x 1.5/16" JIC
18	D17-0809+	1	1	Elbow 90, 1/2" NPT x 9/16" JIC M/M
19	D21-2420+	1	1	Reducing Bush, 1.1/2" NPT x 1.1/4" NPT
20	D37-0404+	1	1	Elbow 90, 1/4" NPT x 1/4" NPT M/F
21	DA4-0604+	1	1	Nipple, 3/8" NPT x 1/4" NPT

**BD00026963**  
**REV. 0**

**HYDRAULIC GROUP FRONT FRAME  
LS190**

**05-03**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-03**

**Sandvik Underground Mining Flameproof Equipment**



BD00026963  
REV. 0

HYDRAULIC GROUP FRONT FRAME  
LS190

05-03

REFERENCE DRAWINGS

SCHEMATIC - HYDRAULIC (STANDARD)	A2U220-501354
SCHEMATIC - PNEUMATIC (STANDARD)	A2U220-601194
FRONT FRAME COMPLETE	BD00026960
LS190 MASTER ASSY	LS191_MASTER_ASSY

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 05-03

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

### HYDRAULIC GROUP FRONT FRAME LS190

05-03

BD00026963

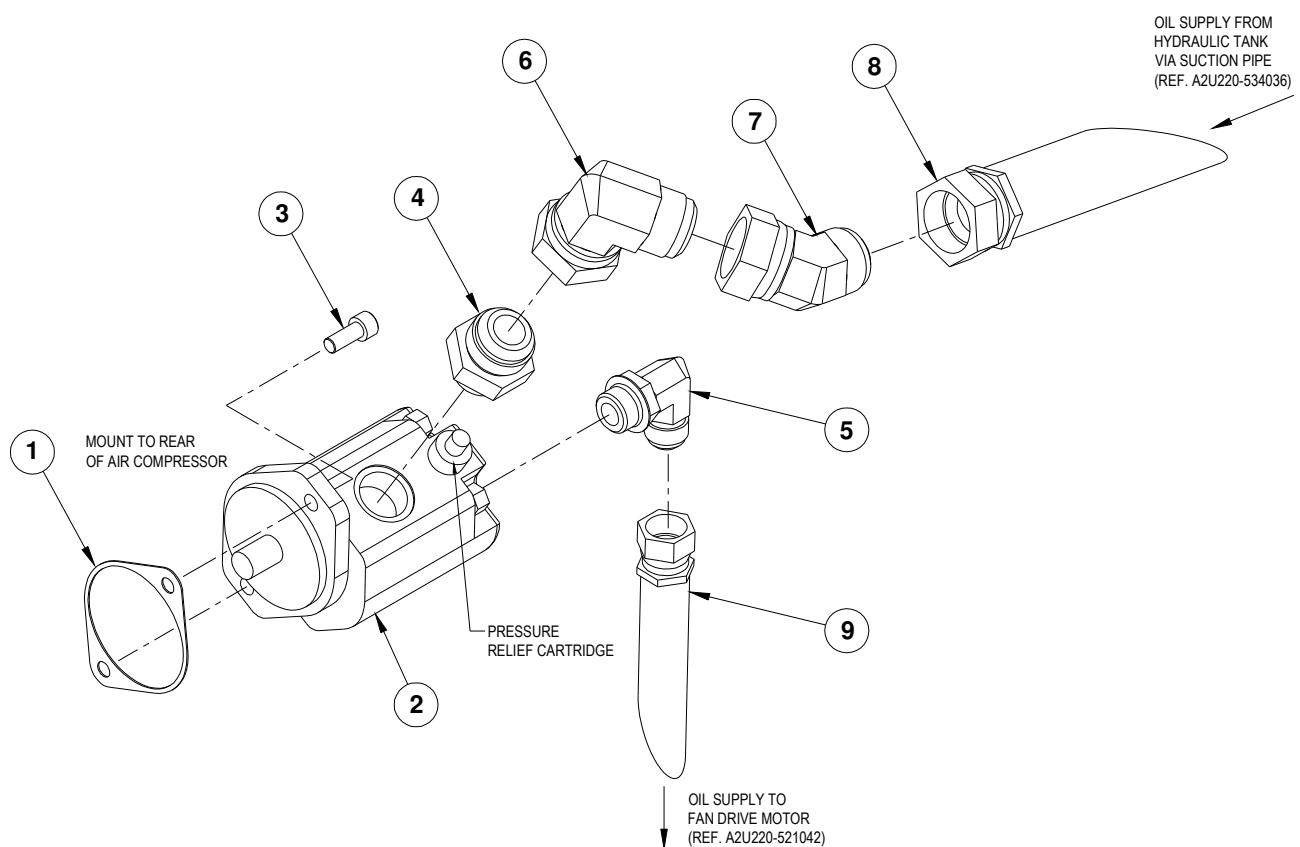
REV. 0

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-544048	05-05		BUCKET VALVE
2	A2U220-545035	05-09-01		QDS Coupling Manifold Group
3	BD00005808	05-09-02		Lines Group - Front Brakes

**A2U220-510038**  
**REV. 2**

**PUMP & MOUNTING GROUP (FAN  
DRIVE)**

**05-03**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-03**

**Sandvik Underground Mining Flameproof Equipment**

**PUMP & MOUNTING GROUP (FAN  
DRIVE)**

05-03

**A2U220-510038****REV. 2**

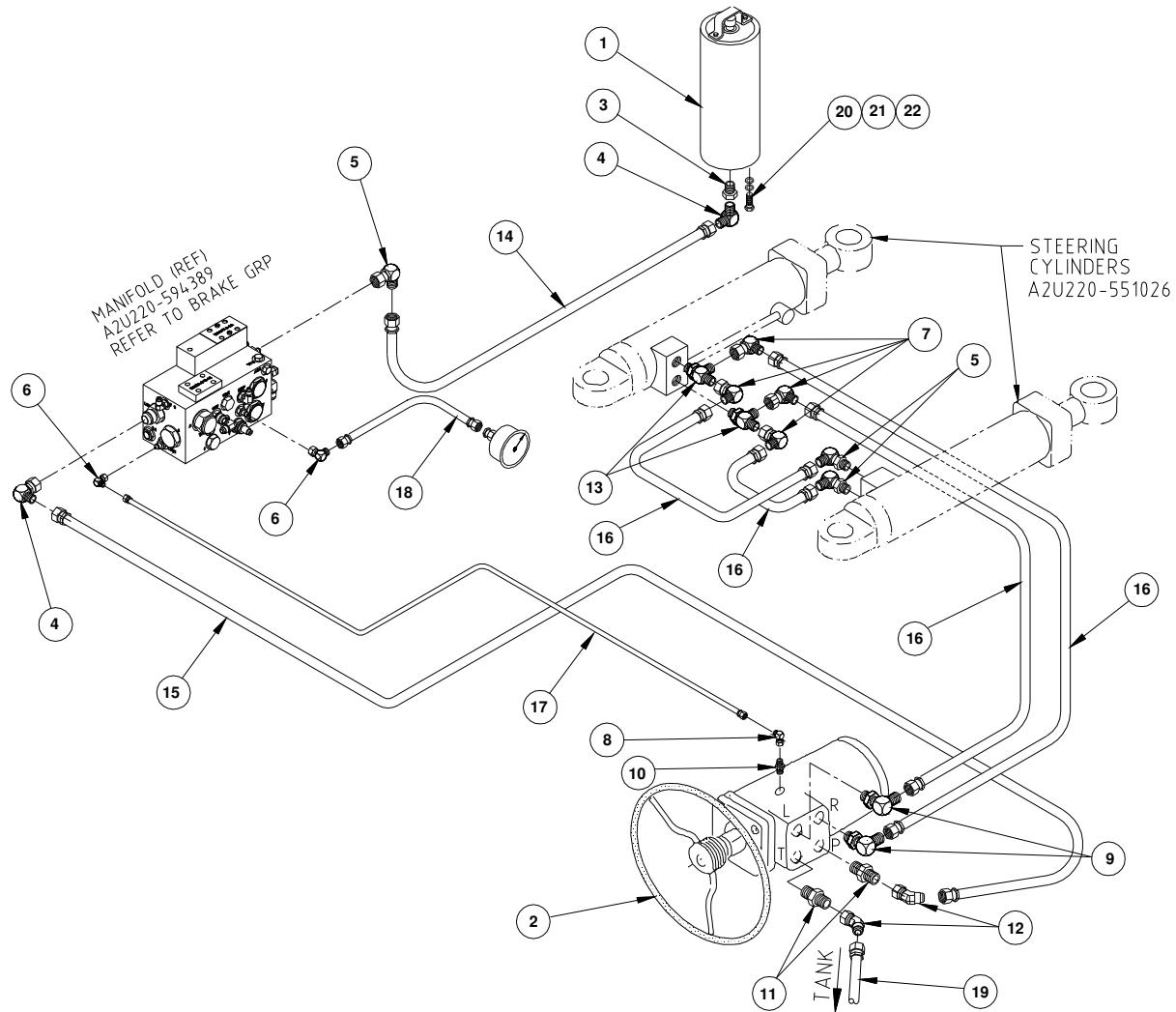
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	C2A6D1004		1	Gasket
2	A2U220-511053		1	Pump
3	445202801		2	S.H.C.S. M10 x 25 LG
4	D52-2126		1	Nipple UNO_RING 1.5/16" - JIC 4.5/8"
5	D53-1717		1	Elbow 90 Deg UNO_RING 1.1/16" - JIC 1.1/16", M/M
6	D50-2626		1	Adaptor Union 90 Deg JIC 1.5/8" - JIC 1.5/8", M/F
7	D51-2626		1	Adaptor Union 45 Deg JIC 1.5/8" - JIC 1.5/8", M/F
8	D800-20-210-26		1	Hose Assembly
9	D2900-12-140-17		1	Hose Assembly

A2U220-542029

**STEERING CONTROL GROUP**

05-04

REV. 2



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-04**

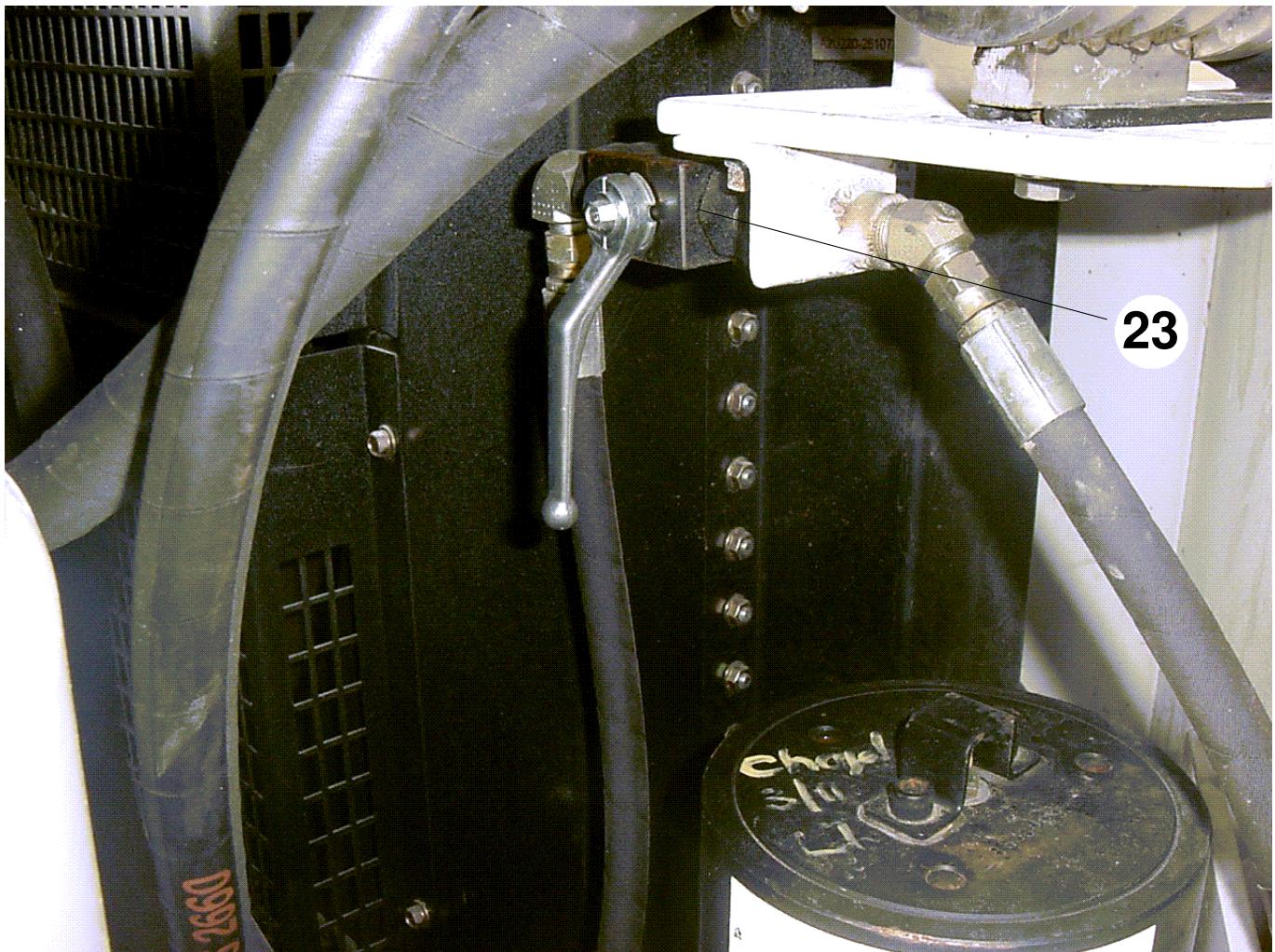
Sandvik Underground Mining Flameproof Equipment

A2U220-542029

**STEERING CONTROL GROUP**

05-04

REV. 2



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-04**

Sandvik Underground Mining Flameproof Equipment

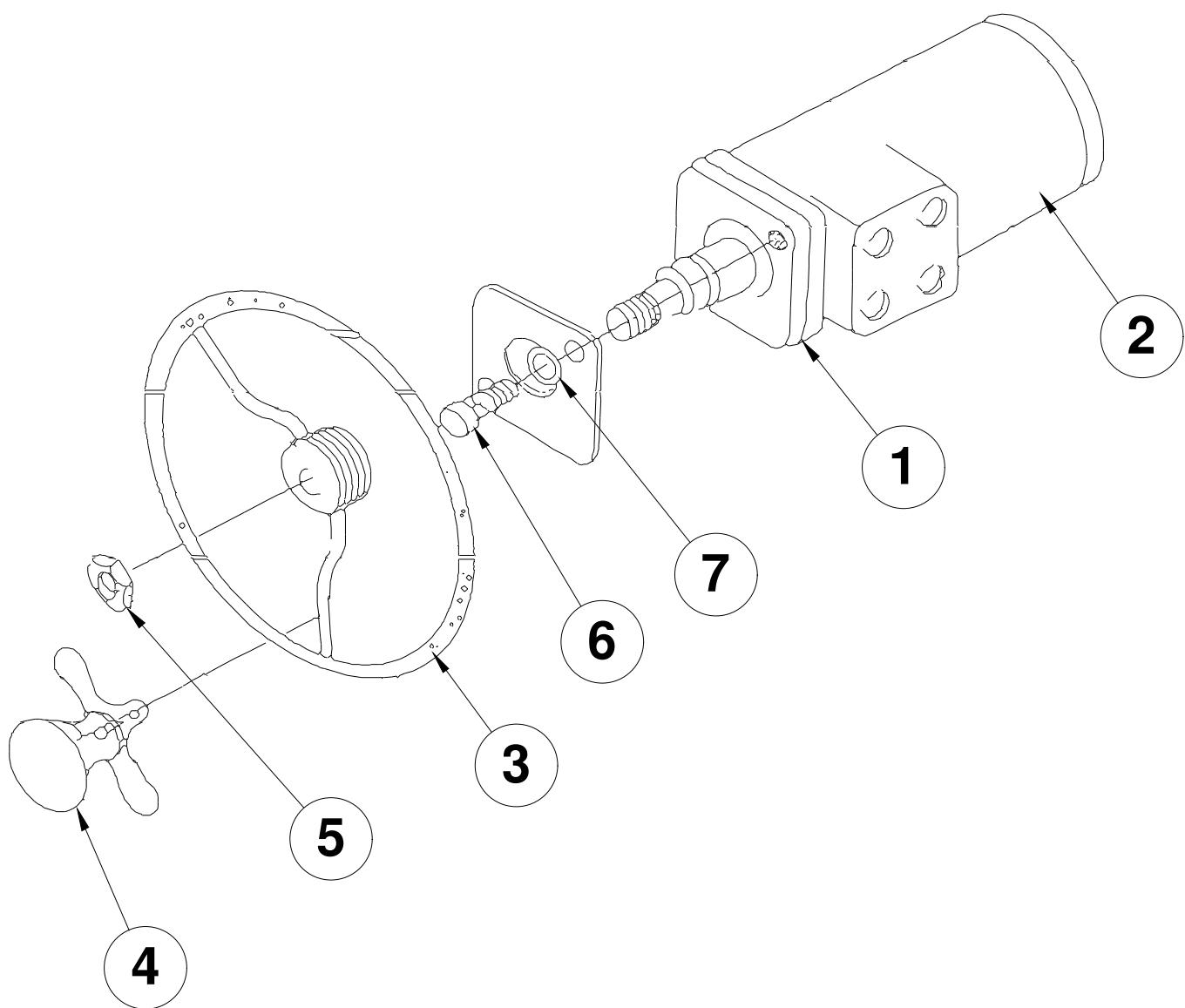
**A2U220-542029****STEERING CONTROL GROUP****05-04****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U913-593006		2	ACCUMULATOR
2	A2U913-421003	05-04-02		STEERING CONTROL ASSEMBLY
3	A2U913-596126		1	FITTING, STEERING ACCUMULATOR
4	D53/1712		2	ELBOW 90 DEG
5	D53/1212		2	ELBOW 90 DEG
6	D53/0707		2	ELBOW 90 DEG
7	D50/1212		3	ELBOW 90 DEG
8	D50/0707		1	ELBOW 90 DEG
9	D52/0707		1	NIPPLE
10	D52/1212		1	NIPPLE
11	DD52/1217		2	NIPPLE
12	D51/1717		2	ELBOW 45 DEG
13	D80/121212		2	TEE
14	D2900-12-360-12		1	HOSE ASSEMBLY
15	D2900-12-140-17		1	HOSE ASSEMBLY
16	D2900-08-60-12		4	HOSE ASSEMBLY
17	D2900-04-140-07		1	HOSE ASSEMBLY
18	D2900-04-110-07		1	HOSE ASSEMBLY
19	D2900-12-80-17		1	HOSE ASSEMBLY
20	T8HG32		3	CAPSCREW, SOCKET
21	W8GF		3	WASHER, FLAT
22	W8GA		3	WASHER, SPRING
23	A2U900-694099		1	ACCUMULATOR DRAIN VALVE

A2U913-421003  
REV. 4

**STEERING CONTROL GROUP**

05-04-02



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-04-02**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

A2U913-421003

### STEERING CONTROL GROUP

05-04-02

REV. 4

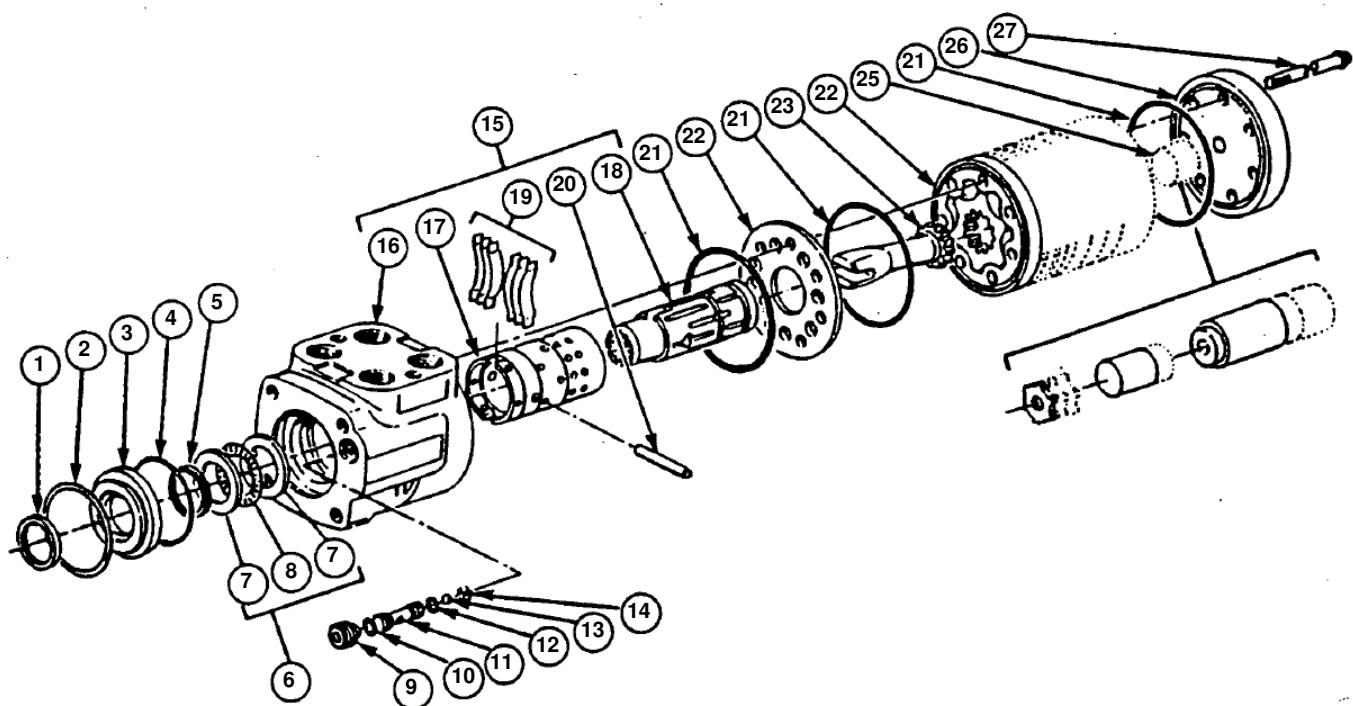
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	359-450002		1	Column, Steering
2	64802776	05-04-02-01	1	Steering Assembly
3	A2U130-421002		1	Steering Wheel
4	A2U130-492018		1	Steering Knob
5	T12HJ		1	Nut
6	T6GG24		4	Bolt, Hex Hd UNC 3/8" x 1 1/2"
7	W6GF		4	Washer, Spring 3/8"

64802776

**STEERING VALVE**

05-04-02-01

REV.



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 05-04-02-01

Sandvik Underground Mining Flameproof Equipment

**64802776****STEERING VALVE****05-04-02-01****REV.**

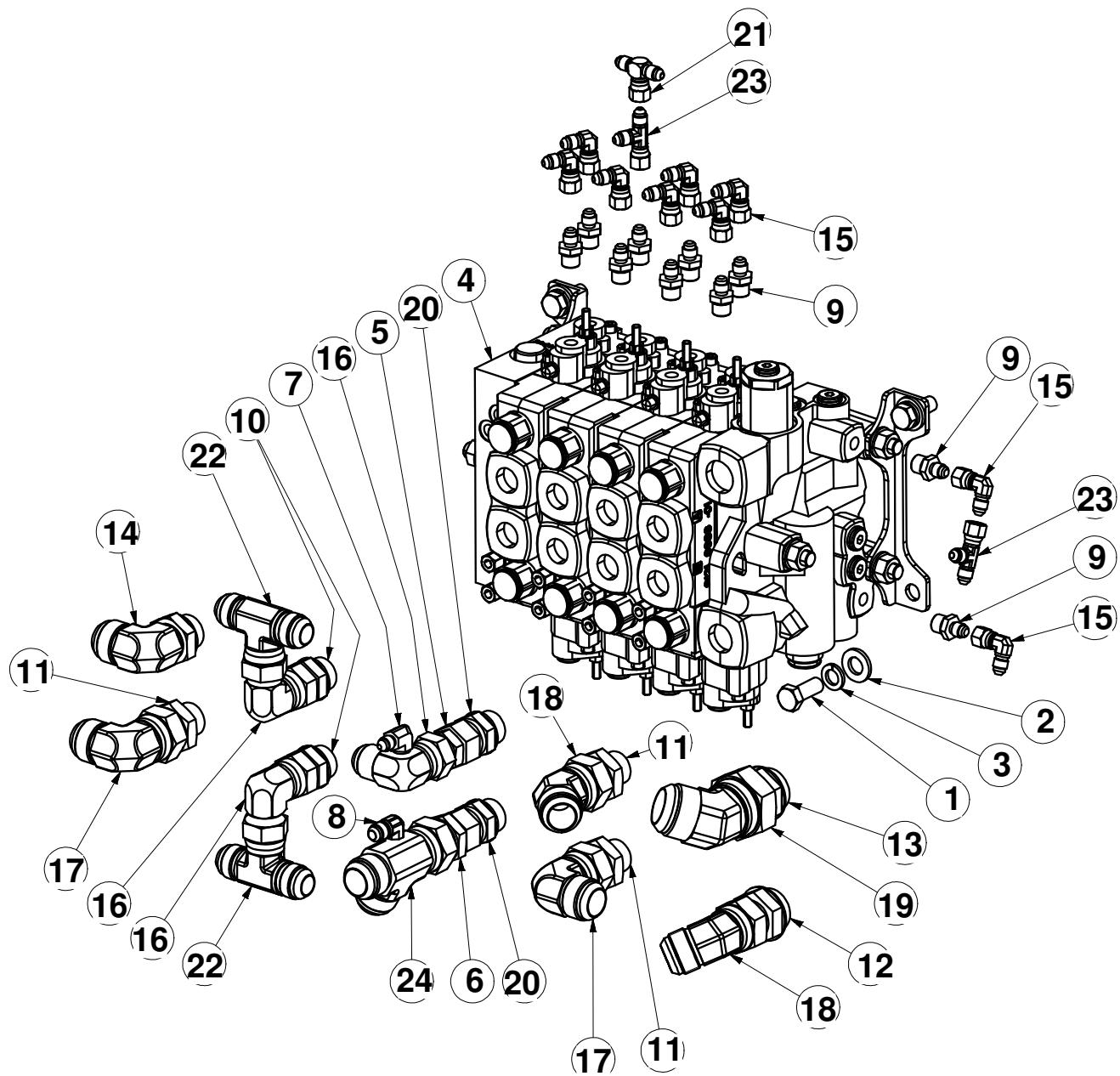
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	69003242	1	1	Seal, Dust
2	69003171	1	1	Ring, Retaining
3	69003221	1	1	Bushing, Seal Gland
4	64102010	1	1	O_Ring
5	69003200	1	1	Seal
6	69003205	1	1	Bearing, Needle Roller
7	69003229	2	1	Race, Bearing
8	69003204	1	1	Bearing, Roller Thrust Assy.
9	69003172	1	1	Setscrew
10	64401549	1	1	O-Ring
11	69003228	1	1	Seat, Check Ball
12	69003175	1	1	Seal
13	69003178	1	1	Ball, Check
14	69003213	1	1	Retainer, Check Ball
15	69003231	1	1	Control, Parts Assy. (Parts 16-20)
19	69003188	6	1	Spring, Centering
20	69003174	1	1	Pin, Centering
21	C2L5776	3	1	Seal R/B C2L9086-2
22	69003226	1	1	Plate, Spacer
23	69003189	1	1	Drive
24	69003238	1	1	Gerotor
25	69003234	1	1	Spacer
26	69003241	1	1	Cap, End
27	69003193	7	1	Screw
28	69003208			Seal Kit (Parts 1,4,5,10,12,21)

A2U220-544048

**BUCKET CONTROL VALVE**

05-05

REV. 1



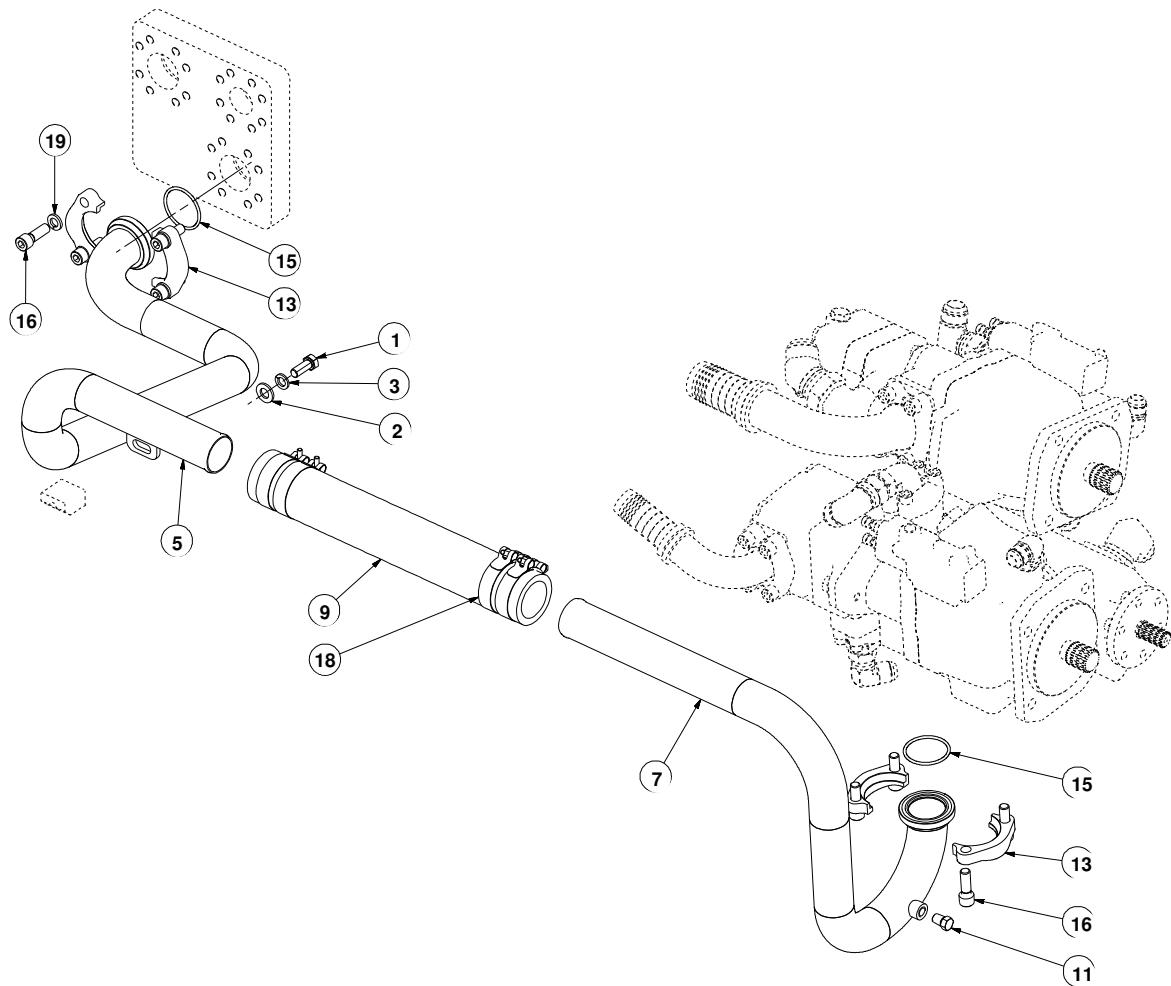
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-05**

Sandvik Underground Mining Flameproof Equipment

**A2U220-544048****BUCKET CONTROL VALVE****05-05****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502843		4	BOLT, HEX HD M12 x 30 LG
2	450061619		4	WASHER, FLAT M12
3	450081124		4	WASHER, SPRING M12
4	A2U900-591643	05-09-03-05	1	BUCKET CONTROL VALVE
5	D16-1717		1	NIPPLE 1 1/16" JIC x 1 1/16" JIC
6	D16-2117		1	NIPPLE 1 5/16" JIC x 1 1/16" JIC
7	D17-0407		1	ELBOW 90, 1/4" NPT x 7/16" JIC M/M
8	D17-0409		1	ELBOW 90, 1/4" NPT x 9/16" JIC M/M
9	D226-0407		10	NIPPLE 1/4" BSPP 7/16" JIC
10	D226-1217		2	NIPPLE 3/4" BSPT 1 1/16" JIC
11	D226-1221		3	NIPPLE
12	D226-1621		1	NIPPLE 1" BSPP x 1 5/16" JIC
13	D226-1626		1	NIPPLE 1" BSPP x 1 5/8" JIC
14	D257-1221		1	ELBOW 90, 3/4" BSP x 1 5/16" JIC M/M
15	D50-0707		9	ELBOW 90, 7/16" JIC x 7/16" JIC M/F
16	D50-1717		3	ELBOW 90, 1 1/16" JIC x 1 1/16" JIC M/F
17	D50-2121		2	ADAPTOR UNION 90, 1 5/16" JIC x 1 5/16" JIC M/F
18	D51-2121		2	ADAPTOR UNION 45, 1 5/16" JIC x 1 5/16" JIC M/F
19	D51-2626		1	ADAPTOR UNION 45, 1 5/8" JIC x 1 5/8" JIC M/F
20	DA226-1217		2	UNION 3/4" BSSP x 1 1/16" JIC M/F
21	DA81-070707		1	TEE PIECE 7/16" JIC x 7/16" JIC F/M/M
22	DA81-171717		2	TEE PIECE 1 1/16" JIC x 1 1/16" JIC M/M/F
23	DA82-070707		2	TEE PIECE 7/16" JIC x 7/16" JIC F/M/M
24	DA82-212121		1	TEE PIECE 1 5/16" JIC x 1 5/16" JIC M/M/F

**A2U220-540067****REAR SUCTION LINES****05-07****REV. 1****PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION 05-07**

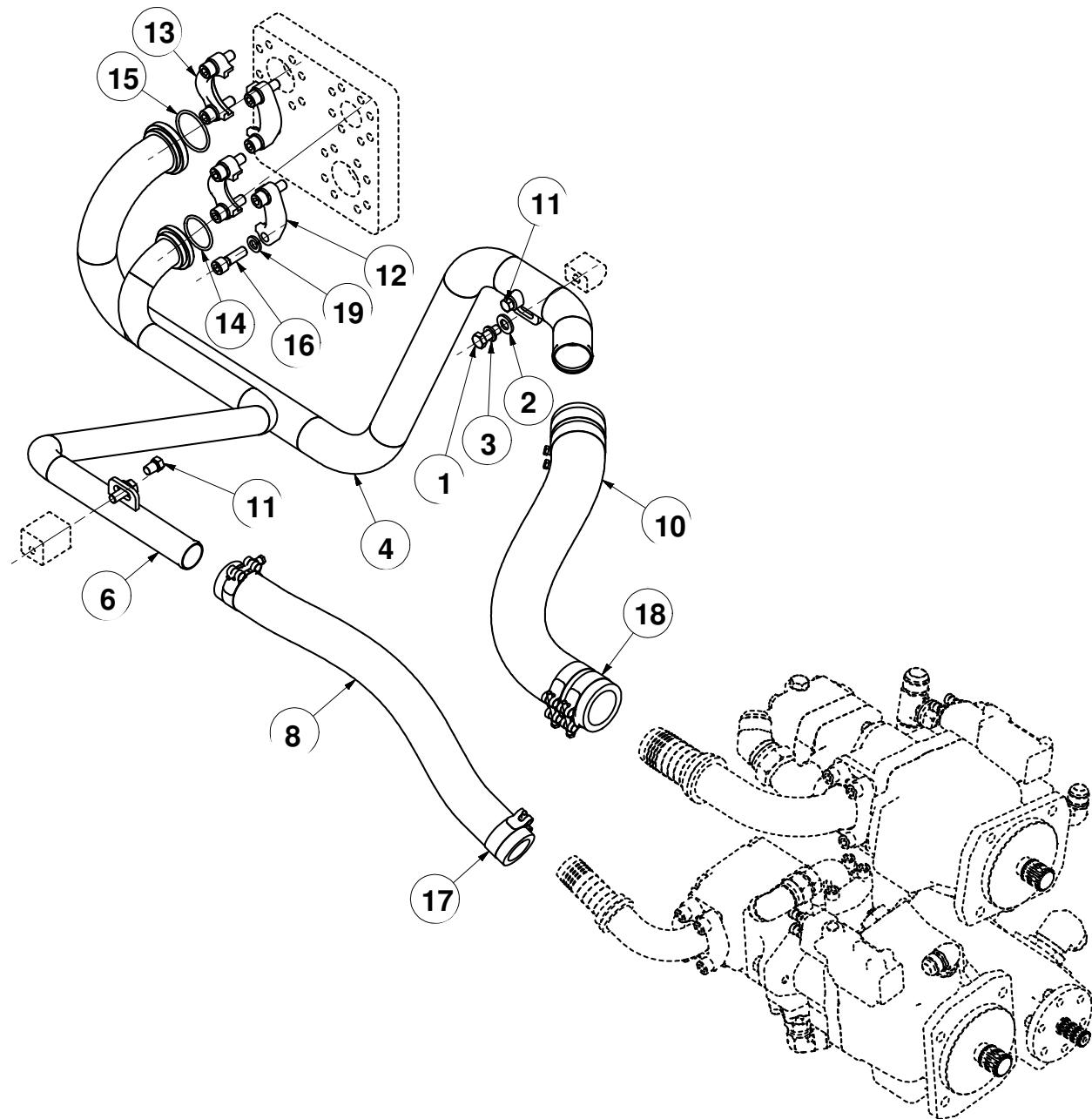
Sandvik Underground Mining Flameproof Equipment

A2U220-540067

**REAR SUCTION LINES**

05-07

REV. 1



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-07**

Sandvik Underground Mining Flameproof Equipment

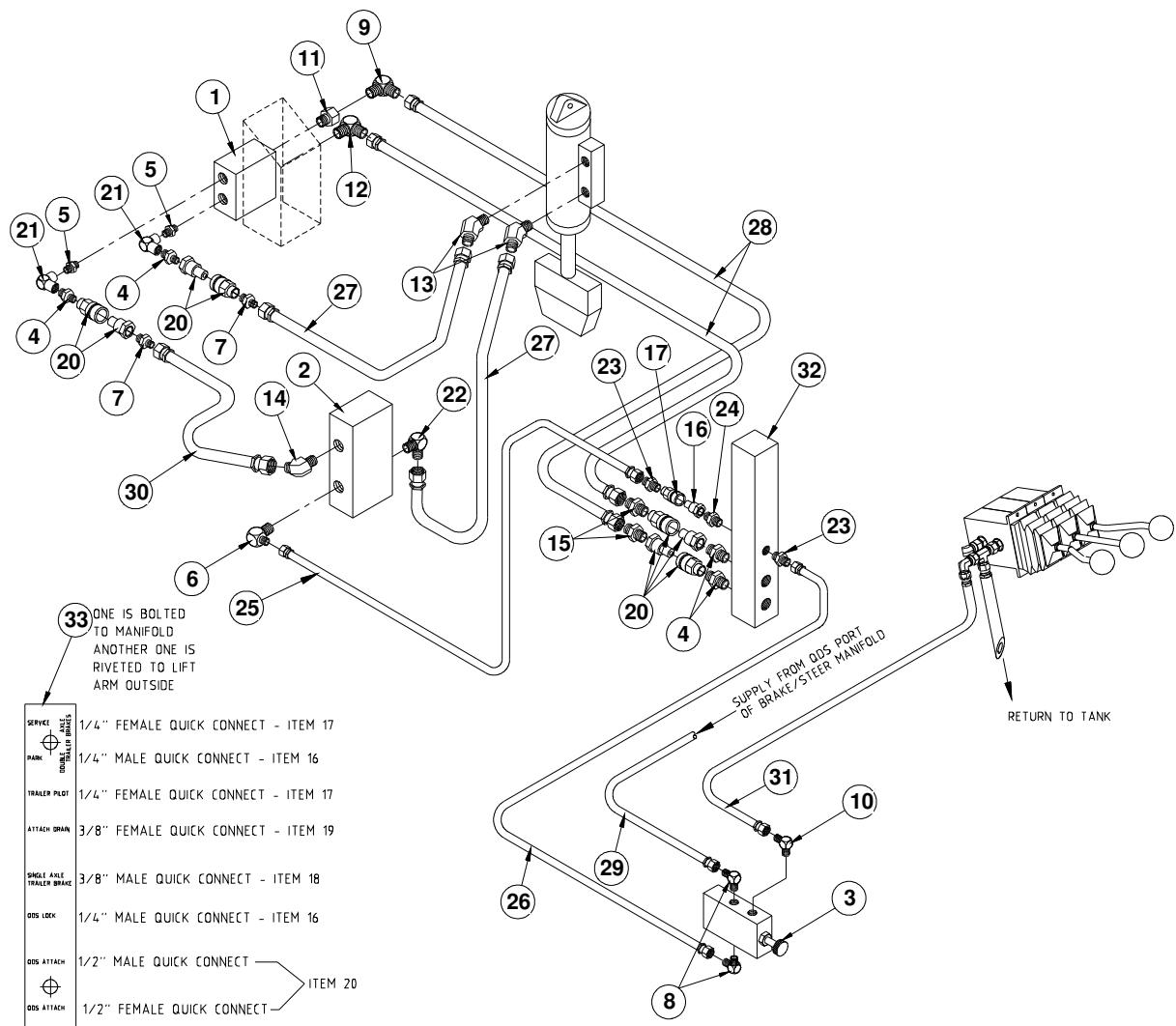
**A2U220-540067****REAR SUCTION LINES****05-07****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502843	3		HEX HD BOLT M12 x 30 LG
2	450061619	3		WASHER, FLAT M12
3	450081124	3		WASHER, SPRING M12
4	A2U220-534057	1		SUCTION PIPE
5	A2U220-534058	1		SUCTION PIPE
6	A2U220-534059	1		SUCTION PIPE
7	A2U220-534060	1		SUCTION PIPE
8	D4700-24-55	1		SUCTION HOSE D4700/24 x 550 LG
9	D4700-32-45	1		SUCTION HOSE D4700/32 x 450 LG
10	D4700-32-60	1		SUCTION HOSE D4700/32 x 600 LG
11	D60-04	3		PLUG 1/4" NPT
12	D90-24	2		CLAMP SPLIT FLANGE, SAE 11/2" CODE 61
13	D90-32	6		FLANGE SAE CODE 61 CLAMP DIA 2"
14	DR524	1		O_RING 1 1/2" SAE
15	DR532	3		O_RING 2" SAE
16	T8VH24	16		S.H.C.S. 1/2-13 x 1 1/2 HEX SHCS
17	TTBS-52-55	2		HOSE CLAMP TTBS-52-55
18	TTBS-67-73	8		HOSE CLAMP TTBS-67-73
19	W8GF	12		WASHER, SPRING 1/2 DIA

**A2U220-545031**  
**REV. 0**

**QDS LINES GROUP**

**05-07**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-07**

Sandvik Underground Mining Flameproof Equipment

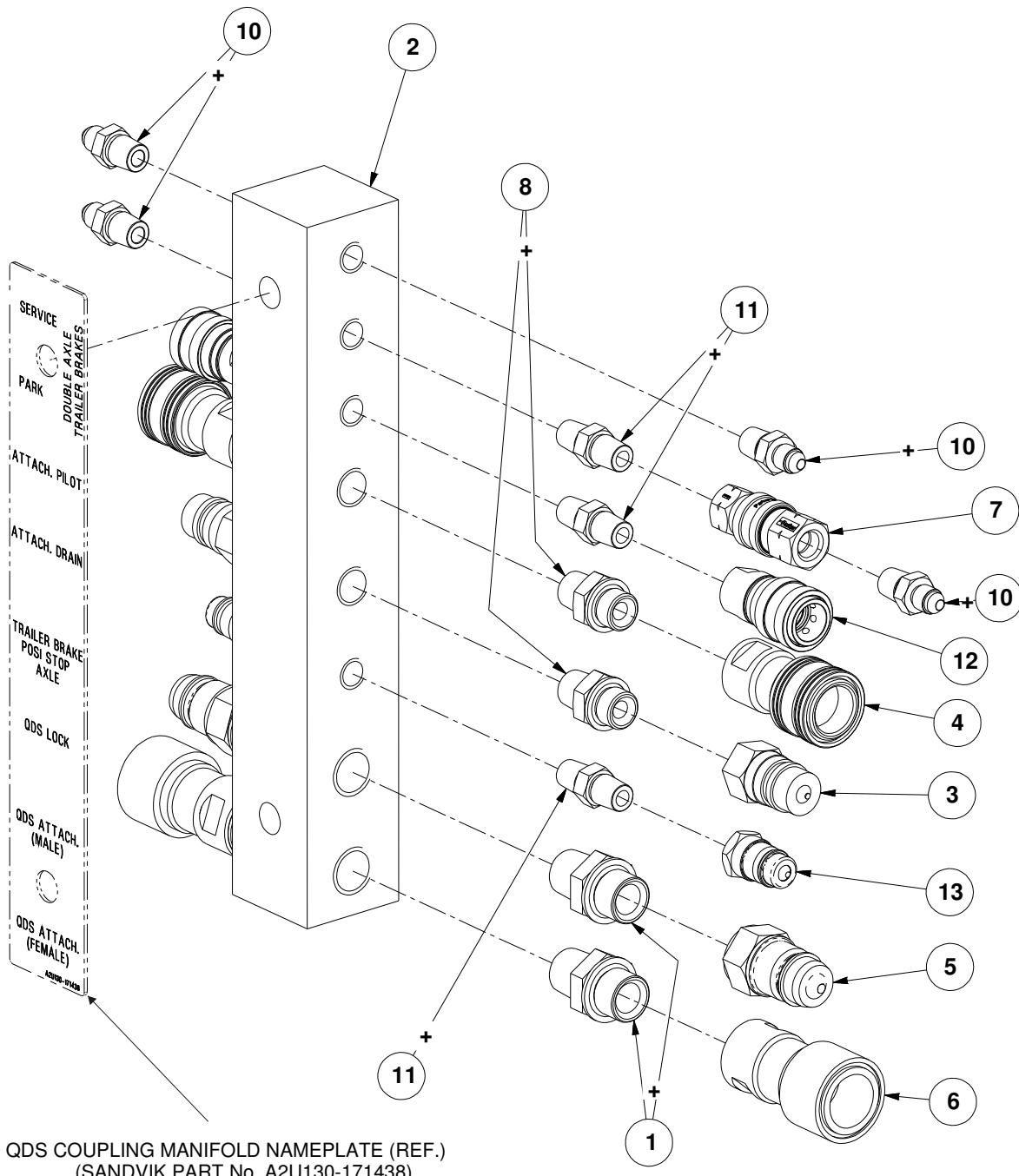
**A2U220-545031****QDS LINES GROUP****05-07****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U130-591243	1	1	QDS MANIFOLD
2	A2U130-594180	1	1	PILOT CHECK QDS LOCK
3	A2U900-594393	1	1	ISOLATION VALVE
4	DA4-88	4	1	NIPPLE
5	CB3-1208	2	1	NIPPLE
6	D257-47	1	1	ELBOW
7	D15-812	2	1	NIPPLE
8	D17-47	2	1	ELBOW
9	D17-817	1	1	ELBOW
10	D17-0409	1	1	ELBOW 90 DEG
11	D66-128	1	1	ADAPTOR
12	D53-1217	1	1	ELBOW
13	D41-812	2	1	ELBOW
14	D54-1212	1	1	ELBOW
15	D15-817	2	1	NIPPLE
16	E2HSM252	2	1	MALE QUICK CONNECT
17	E2HSM251	2	1	FEMALE QUICK CONNECT
18	A2U900-596145	1	1	MALE QUICK CONNECT
19	A2U900-596146	1	1	FEMALE QUICK CONNECT
20	A2U900-596153	4	1	COUPLING COMPLETE
21	D38-88	2	1	ELBOW
22	D53-1212	1	1	ELBOW
23	D15-47	2	1	NIPPLE
24	DA4-44	1	1	NIPPLE
25	D29-4-210-7A	1	1	HOSE ASSEMBLY
26	D29-4-370-7	1	1	HOSE ASSEMBLY
27	D29-8-112-12A	2	1	HOSE ASSEMBLY
28	D29-12-240-17A	2	1	HOSE ASSEMBLY
29	D2900-4-130-7	1	1	HOSE ASSEMBLY
30	D2900-4-160-7	1	1	HOSE ASSEMBLY
31	D2900-4-120-9	1	1	HOSE ASSEMBLY
32	A2U130-591253	1	1	QDS MANIFOLD
33	A2U130-171438	2	1	NAMEPLATE
34	D50/77	2	1	ELBOW 90 DEG

**A2U220-545035**  
**REV. 2**

**QDS COUPLING MANIFOLD GRP.  
LS171/ 191**

**05-09-01**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    05-09-01**

Sandvik Underground Mining Flameproof Equipment

**QDS COUPLING MANIFOLD GRP.**

05-09-01

**A2U220-545035****LS171/ 191****REV. 2**

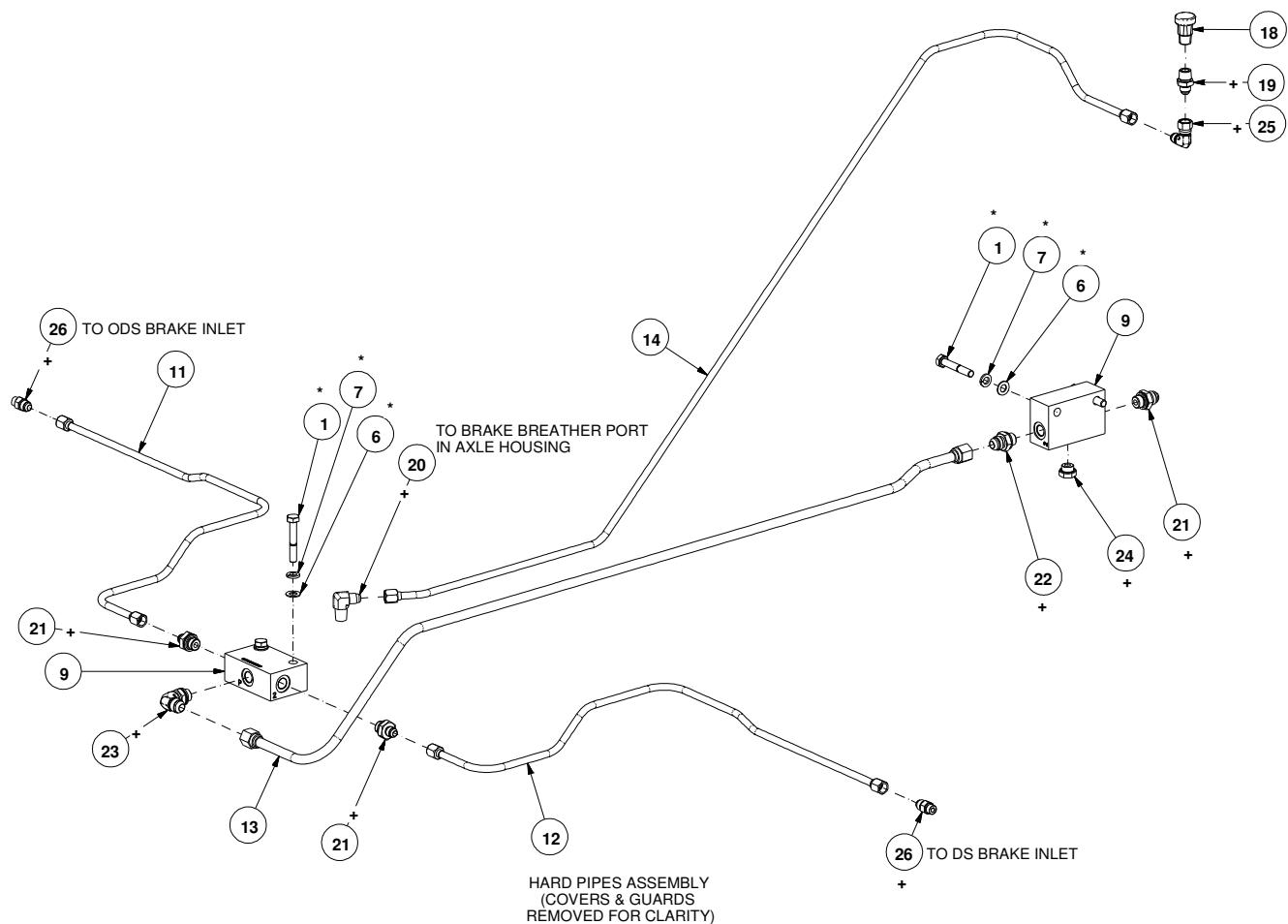
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	8-8FMK4-S+	4	1	Nipple, 1/2" NPT x 1/2" BSPP
2	A2U130-591253	1	1	QDS MANIFOLD
3	A2U900-596145	2	2	Quick Connect, 3/8" BSPP Male
4	A2U900-596146	2	2	Quick Connect 3/8" BSPP Female
5	A2U900-596147	2	2	Quick Connect 1/2" BSPP Male
6	A2U900-596148	2	2	Quick Connect 1/2" BSPP Female
7	A2U900-596192	1	1	1/4" Quick Coupler Pair (No Valve)
8	BD00007110+	4	4	Nipple, 3/8" NPT x 3/8" BSPP
+	BD00009550	1	1	Fitting Kit
10	D15-0407+	4	4	Nipple, 1/4" NPT x 7/16" JIC
11	DA4-0404+	5	5	Nipple, 1/4" NPT x 1/4" NPT
12	E2HSM251	2	2	Quick Connect, 1/4" NPT Female
13	E2HSM252	2	2	Quick Connect, 1/4" NPT Male

**BD00005808**

**FRONT BRAKE LINES GRP. LS191**

**05-09-02**

**REV. 1**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-09-02**

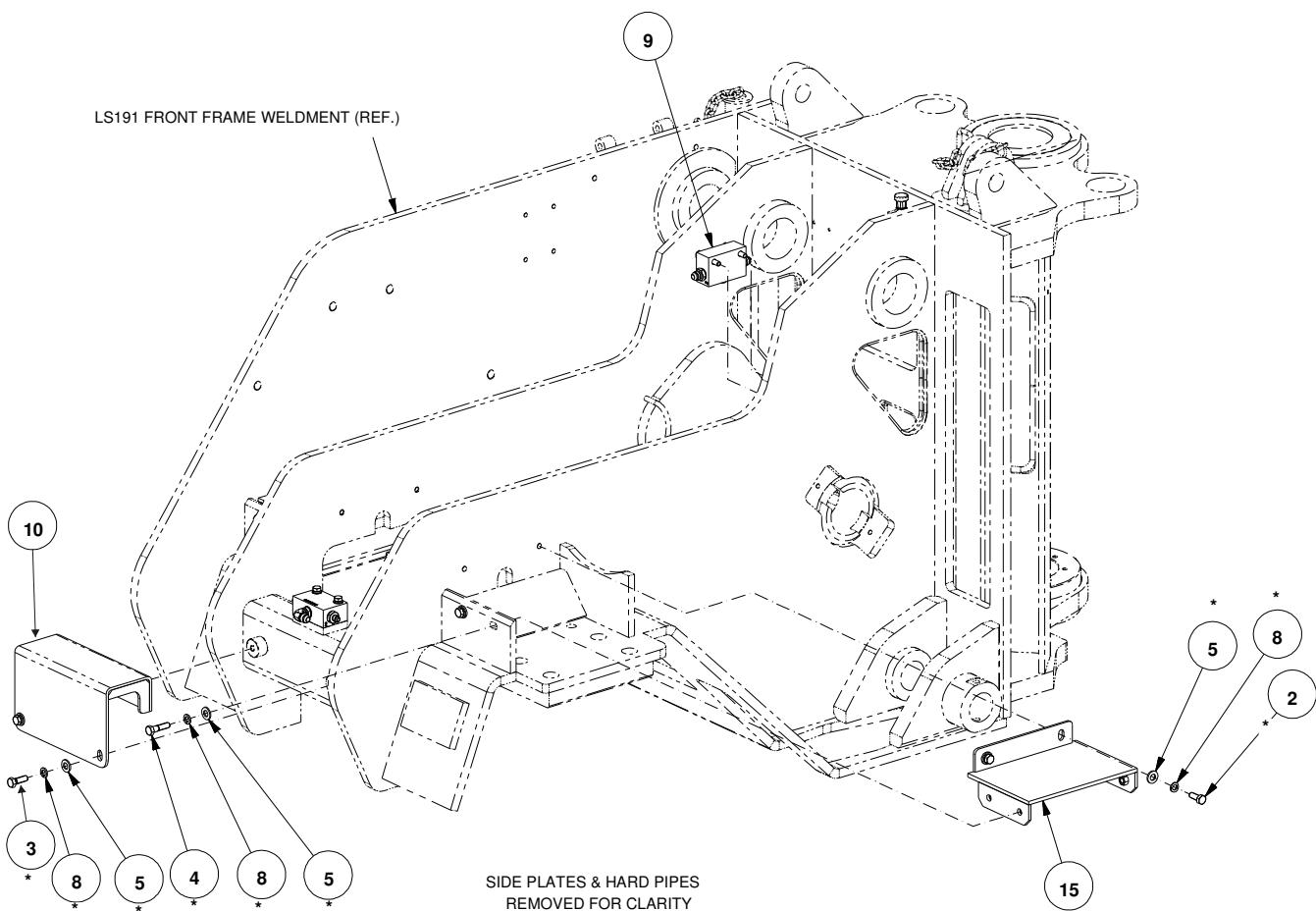
**Sandvik Underground Mining Flameproof Equipment**

BD00005808

**FRONT BRAKE LINES GRP. LS191**

05-09-02

REV. 1



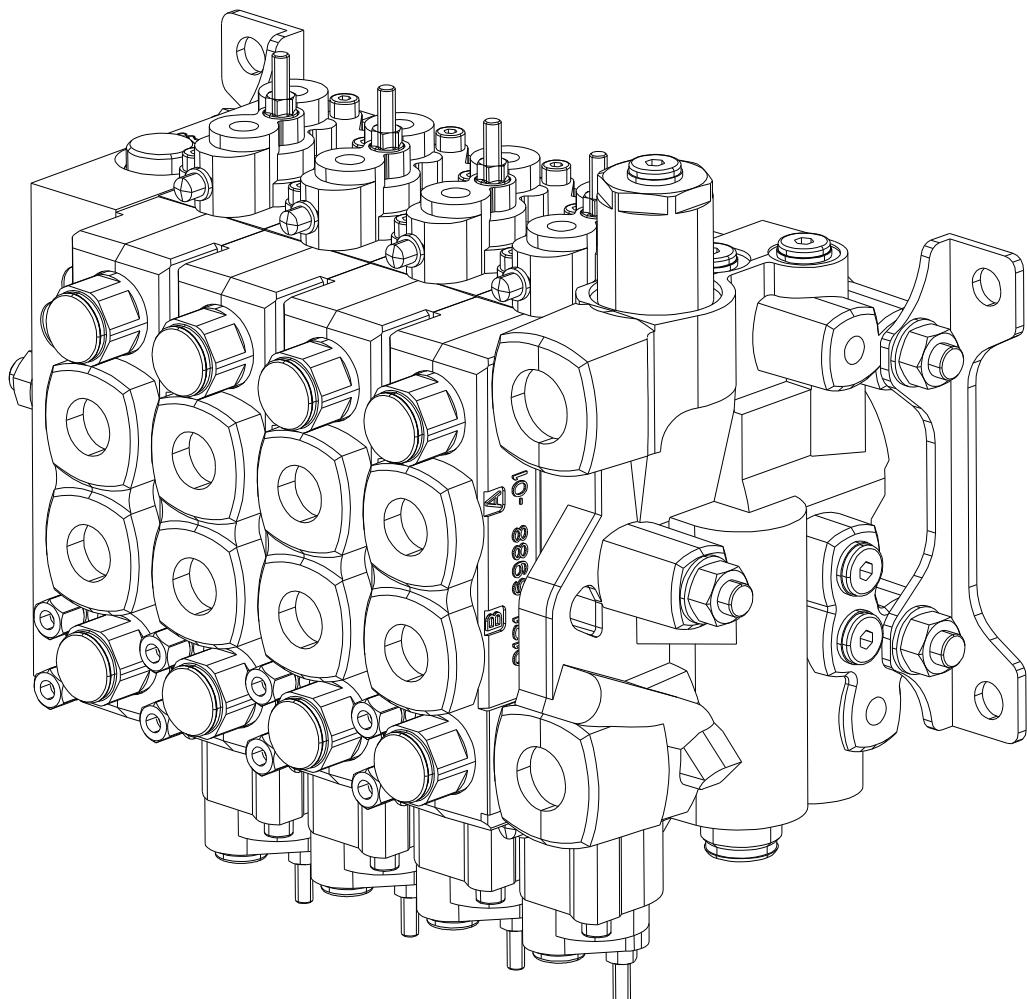
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-09-02**

Sandvik Underground Mining Flameproof Equipment

**BD00005808****FRONT BRAKE LINES GRP. LS191****05-09-02****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402810		4	Bolt Hex Head, M10 x 60mm Long
2	445502843		4	Bolt Hex Head, M12 x 30mm Long
3	445502845		2	Bolt Hex Head, M12 x 35mm Long
4	445502848		4	Bolt Hex Head, M12 x 45mm Long
5	450061619		10	Washer, Flat, 12 mm
6	450062508		4	Washer, Flat, 10 mm
7	450081022		4	Washer, Spring, 10 mm
8	450081124		10	Washer, Spring, 12 mm
9	BD00005800		2	Brake Line Manifold
10	BD00005803		1	Manifold Cover
11	BD00005826		1	Pipe - ODS Brake Line
12	BD00005828		1	Pipe - DS Brake Line
13	BD00005829		1	Pipe - Brake Supply
14	BD00005830		1	Pipe - Brake Breather
15	BD00005831		2	Pipe Cover
*	BD00005999		1	Fastener Kit
+	BD00006000		1	Fitting Kit
18	CL121214		1	Differential Breather, 3/8" NPT
19	D15-0609		1	Nipple, 3/8" NPT x 9/16" JIC
20	D17-0609		1	Elbow 90, 3/8" NPT x 9/16" JIC M/M
21	D256-0609		2	NIPPLE, 3/8" BSPP O-Ring x 9/16" JIC
22	D256-0612		2	NIPPLE, 3/8" BSPP O-Ring x 1/2" JIC
23	D257-0612		1	Elbow 90, 3/8" BSPP x 3/4" JIC M/M
24	D259-06		1	PLUG 3/8" BSPP O-RING
25	D50-0909		1	Adaptor Union 90, 9/16" JIC x 9/16" JIC M/F
26	D52-0809		2	Nipple, 1/2" UNO-Ring x 9/16" JIC

**A2U900-591643****BUCKET VALVE K170LS****05-09-03-05****REV. 2****Bucket Control Valve**

CLOSED CENTRE  
EXTERNAL PILOT OFFSET, SPRING CENTRED

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    05-09-03-05**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

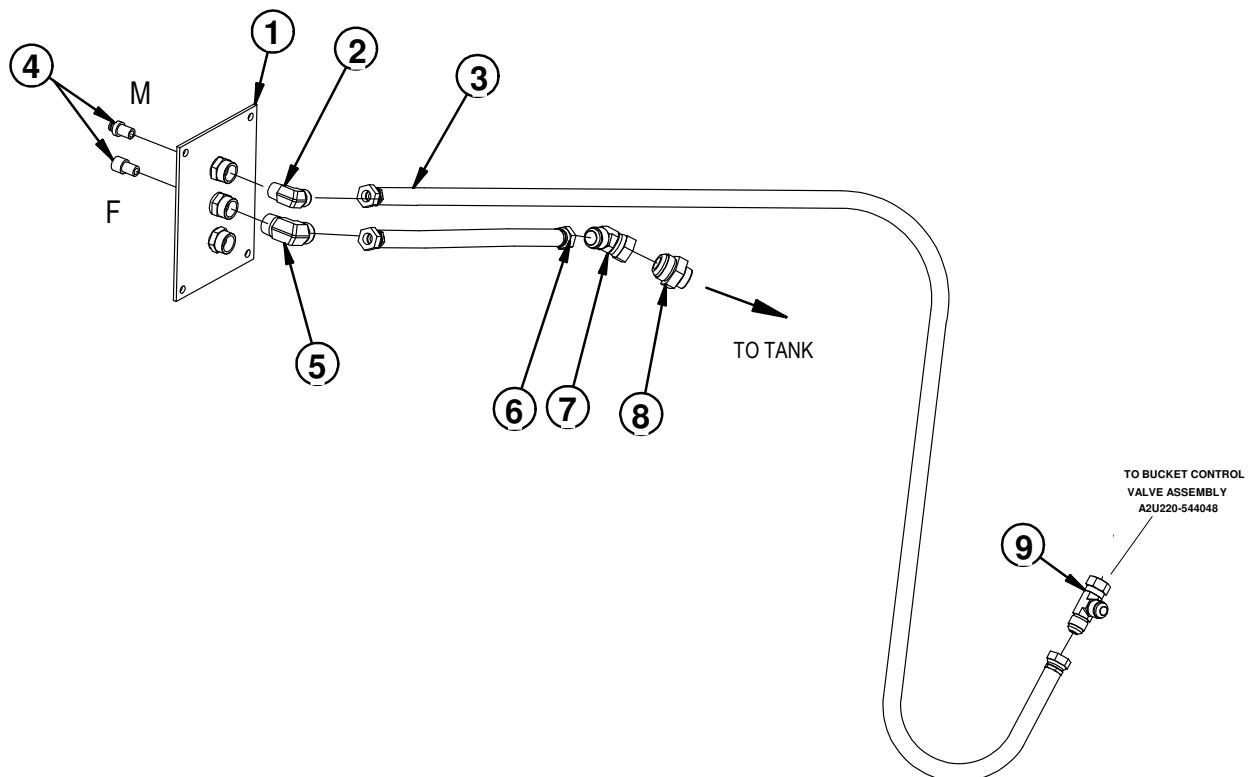
A2U900-591643

BUCKET VALVE K170LS

05-09-03-05

REV. 2

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	A2U900-591643	1	1	Bucket Control Valve K170LS
	BD00017086	1	1	Seal Kit for A2U900-591643

**A2U220-544036****PTO GROUP****05-10****REV. 3**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-10**

Sandvik Underground Mining Flameproof Equipment

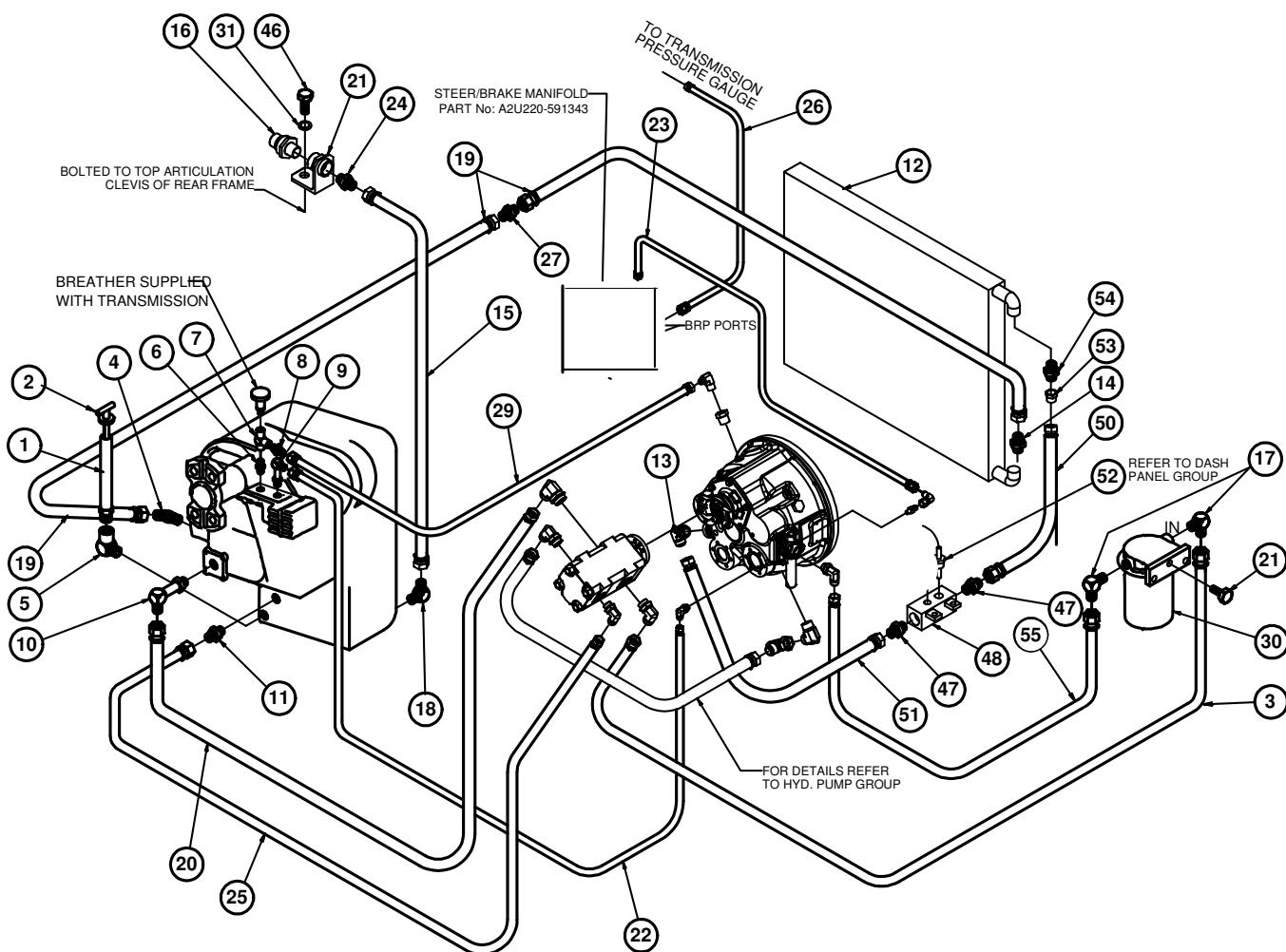
**A2U220-544036****PTO GROUP****05-10****REV. 3**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2130-591303		1	PTO BRACKET
2	D17-1217		1	ELBOW 90 DEG NPT - JIC
3	D2900-12-490-17		1	HOSE ASSEMBLY
4	A2U900-596153		2	QUICK CONNECT COUPLING ASSEMBLY
5	D17-1221		1	ELBOW 90 DEG NPT - JIC
6	D2900-16-440-21		1	HOSE ASSEMBLY
7	D50-2121		1	ELBOW 90 DEG. SWIVEL
8	D52-2621		1	NIPPLE UNC - JIC
9	DA82-171717		1	TEE PIECE

A2U220-330043  
REV. 3

## TRANSMISSION LINES GROUP

05-11



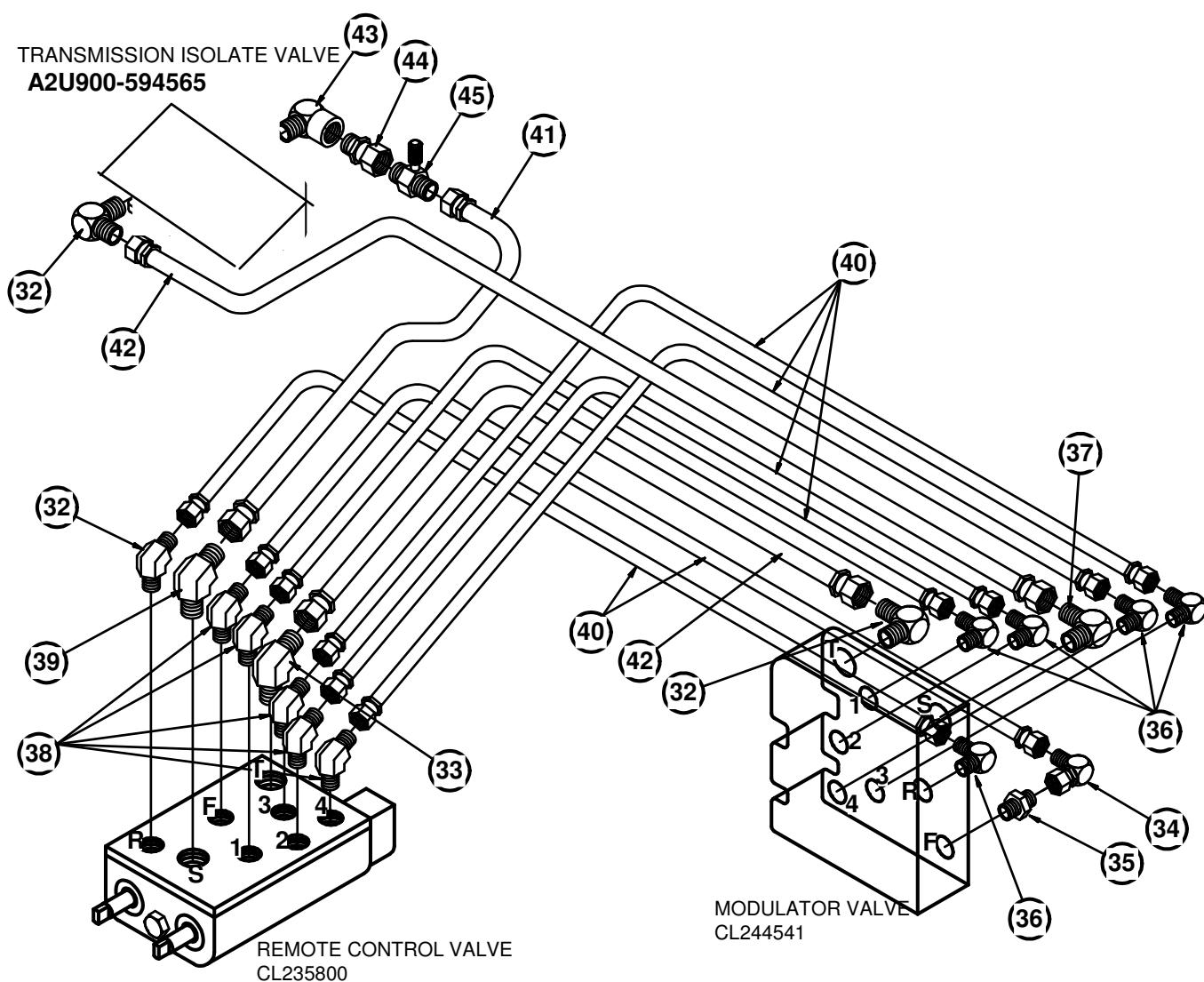
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

A2U220-330043

## TRANSMISSION LINES GROUP

05-11

REV. 3

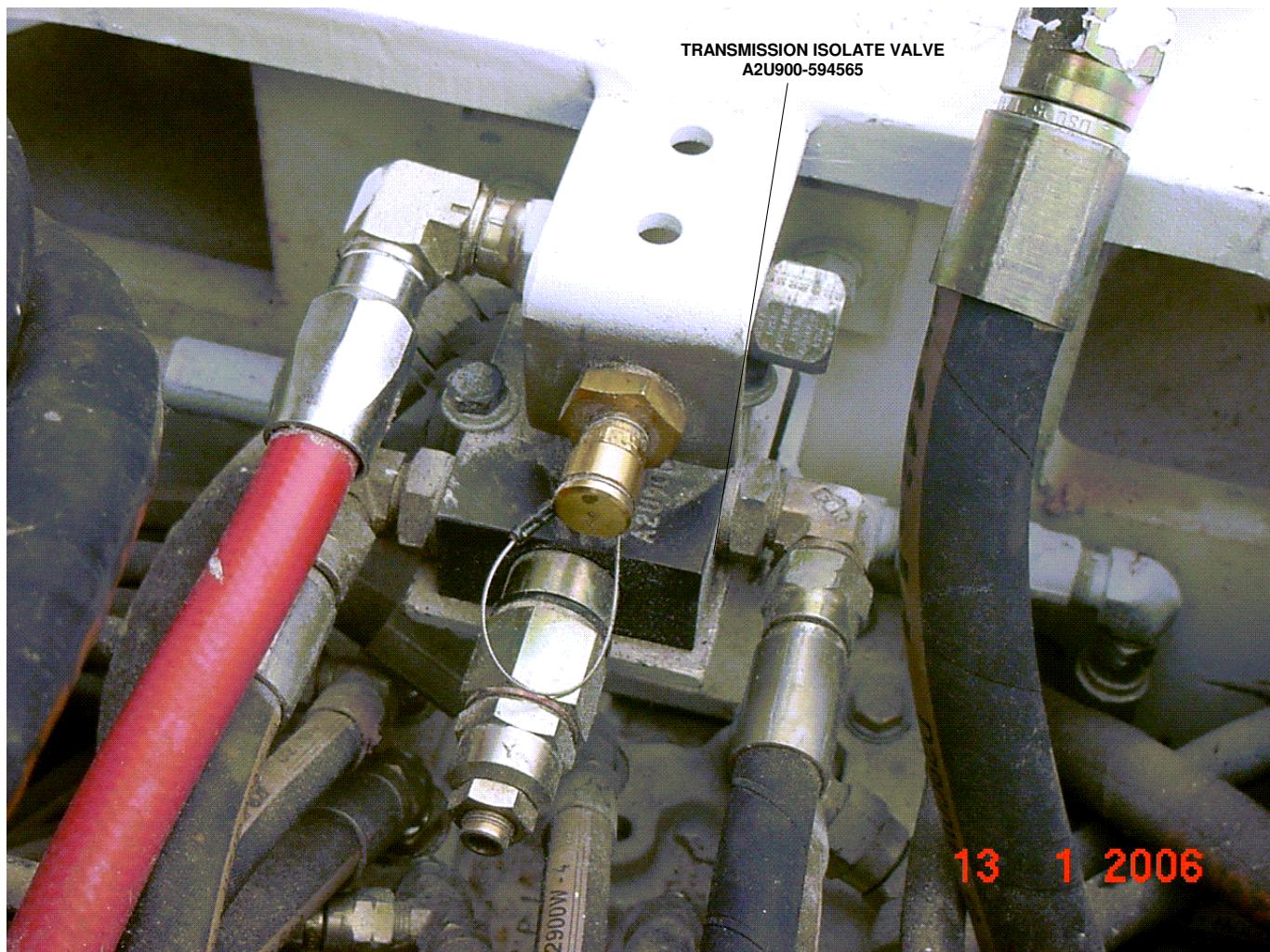


PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-330043  
REV. 3**

**TRANSMISSION LINES GROUP**

**05-11**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-11**

**Sandvik Underground Mining Flameproof Equipment**

**A2U220-330043****TRANSMISSION LINES GROUP****05-11****REV. 3**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	229917		1	DIPSTICK TUBE
2	244676		1	DIPSTICK
3	D2900-12-140-17		1	HOSE ASSEMBLY
4	D54-2121		1	45 DEG ELBOW
5	D37-1616		1	M/F ELBOW
6	DA4-66		1	3/8 NIPPLE
7	D71-666		1	3/8 TEE
8	D15-612		1	NIPPLE
9	DE53-1214		1	3/4-7/8 EXT. ELBOW
10	DE53-2121		1	1"1/16" EXT. ELBOW
11	D15-1617		1	NIPPLE
12	A2U220-318001		1	OIL COOLER
13	D53-1721		1	ELBOW
14	D15-2021		1	NIPPLE
15	D800-12-160-17		1	HOSE
16	A2U900-293002		1	FAST FILL FITTING
17	D53-1717	2		ELBOW
18	D17-1217	1		ELBOW
19	D2900-16-250-21	2		HOSE ASSEMBLY
20	D2900-16-250-21	1		HOSE ASSEMBLY
21	A2U220-391163	1		BRACKET, TRAN. FILL POINT
22	D2900-8-250-12	1		HOSE ASSEMBLY
23	D2900-4-40-7	1		HOSE ASSEMBLY
24	D15-1217	1		NIPPLE
25	D2900-12-250-17	1		HOSE ASSEMBLY
26	D2900-4-210-7	1		HOSE ASSEMBLY
27	D16-1717	2		NIPPLE
28	D39-12-220-17	1		HOSE ASSEMBLY
29	D600-8-160-12	1		AIR HOSE ASSEMBLY
30	CL420058	REF		FILTER
31			1	WASHER, SPRING, 30 DIA
32	D17-812		1	ELBOW
33	D41-812		1	45 ELBOW
34	D50-99		1	ELBOW NIPPLE
35	D52-99		1	NIPPLE
36	D53-99	5		ELBOW
37	D53-1212	1		ELBOW
38	D54-99	6		ELBOW
39	D54-1212	1		ELBOW
40	D2900-4-100-9	6		HOSE ASSEMBLY
41	D2900-6-68-12	1		HOSE ASSEMBLY
42	D2900-6-100-12	2		HOSE ASSEMBLY
43	D37-88	1		ELBOW
44	D25-812	1		ADAPTOR
45	A2U900-596167	1		TEST COUPLING
46	445502933	1		CAPSCREW, M16 x 30

**A2U220-330043****TRANSMISSION LINES GROUP****05-11****REV. 3**

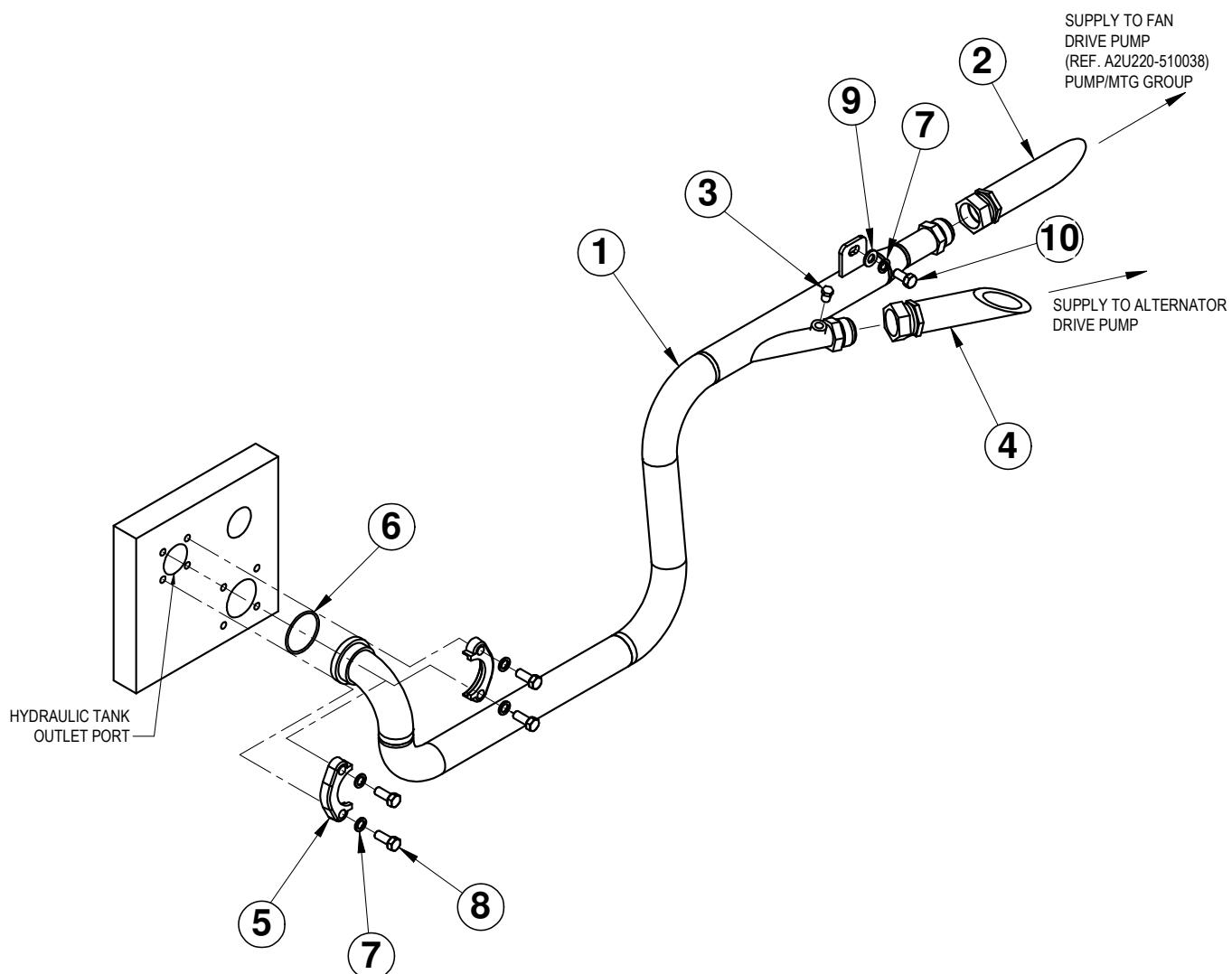
ITEM	PART NO	PAGE	QTY	DESCRIPTION
47	D51-1621	2	1	NIPPLE
48	A2U220-318002	1	1	MANIFOLD, TRANSMISSION TEMPERATURE SENSOR
50	D2900-16-180-21	1	1	HOSE ASSEMBLY
51	D2900-16-110-21	1	1	HOSE ASSEMBLY
52	VGB6	REF	1	SENSOR, TEMP. GAUGE
53	D21-2016	1	1	REDUCING BUSH
54	A2U130-596196	1	1	SWIVEL NIPPLE
55	D2900-12-130-17	1	1	HOSE ASSEMBLY

A2U220-540043

**LINES GROUP (ALT. & FAN DRIVE)**

05-13

REV. 2



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-13**

Sandvik Underground Mining Flameproof Equipment

**A2U220-540043****LINES GROUP (ALT. & FAN DRIVE)****05-13****REV. 2**

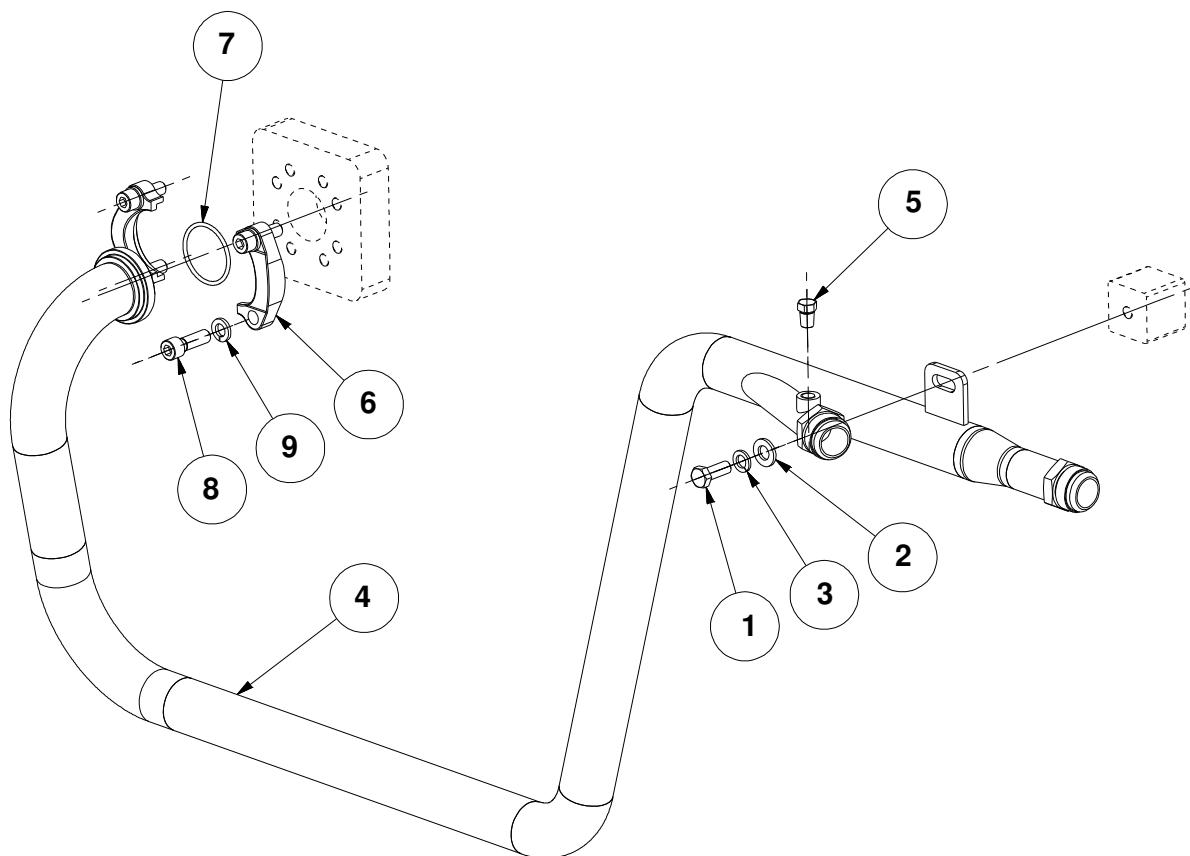
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-534036	1	1	HYDRAULIC INLET PIPE
2	D800-20-210-26	1	1	HOSE ASSEMBLY
3	D60-4	1	1	PLUG NPT
4	D800-20-56-26	1	1	HOSE ASSEMBLY
5	D90-32	2	1	SAE CODE 61 SPLIT CLAMP
6	64401593	1	1	O_RING
7	450081124	5	1	WASHER, SPRING M12
8	445502843	4	1	BOLT, HEX HD M12 x 30 LG
9		1	1	WASHER, FLAT M12
10	445502842	1	1	BOLT, HEX HD M12 x 25 LG

A2U220-540066

**LINES GROUP (ALT. & FAN DRIVE)**

05-13

REV. 0



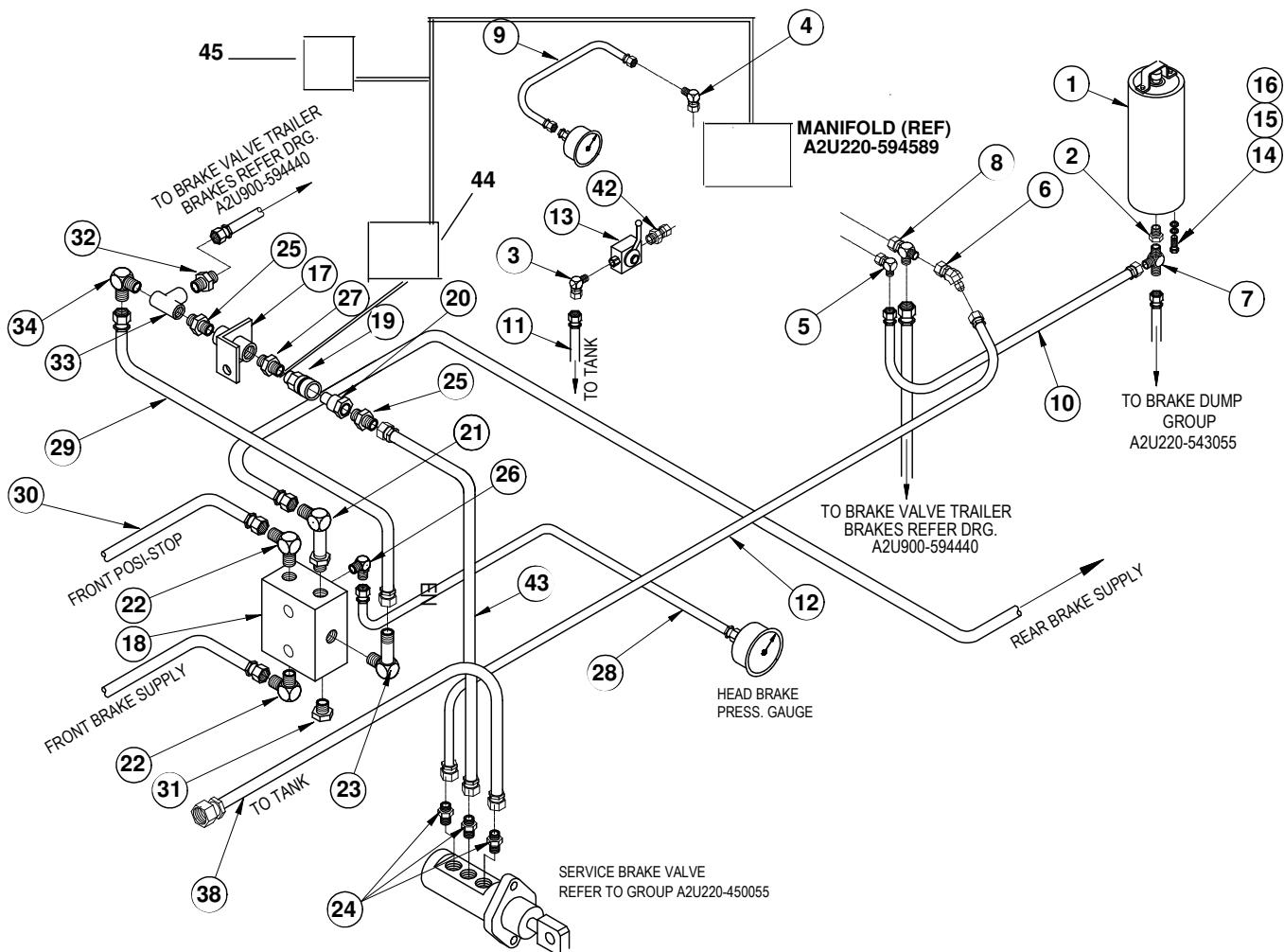
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-13**

Sandvik Underground Mining Flameproof Equipment

**A2U220-540066****LINES GROUP (ALT. & FAN DRIVE)****05-13****REV. 0**

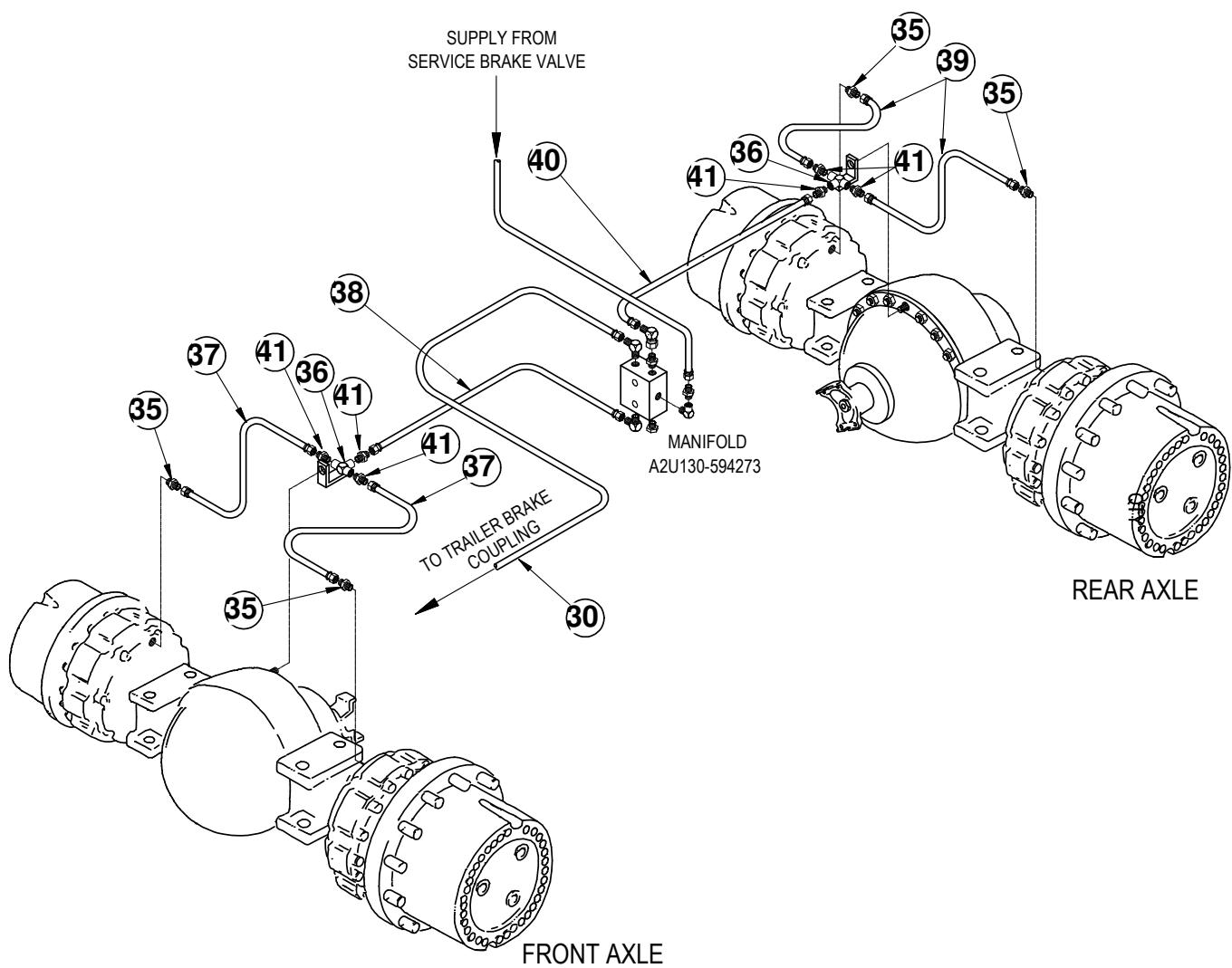
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502843	1		BOLT, HEX HD M12 x 30 LG
2	450061619	1		WASHER, FLAT M12
3	450081124	1		WASHER, SPRING M12
4	A2U220-534056	1		SUCTION PIPE
5	D60-04	1		PLUG 1/4" NPT
6	D90-32	2		FLANGE SAE CODE 61 CLAMP DIA 2"
7	DR532	1		O_RING 2" SAE
8	T8VH24	4		S.H.C.S. 1/2-13 x 1 1/2
9	W8GF	4		WASHER, SPRING 1/2

**A2U220-543051**
**BRAKE LINES GROUP**
**05-14**
**REV. 3**


PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

A2U220-543051  
REV. 3**BRAKE LINES GROUP**

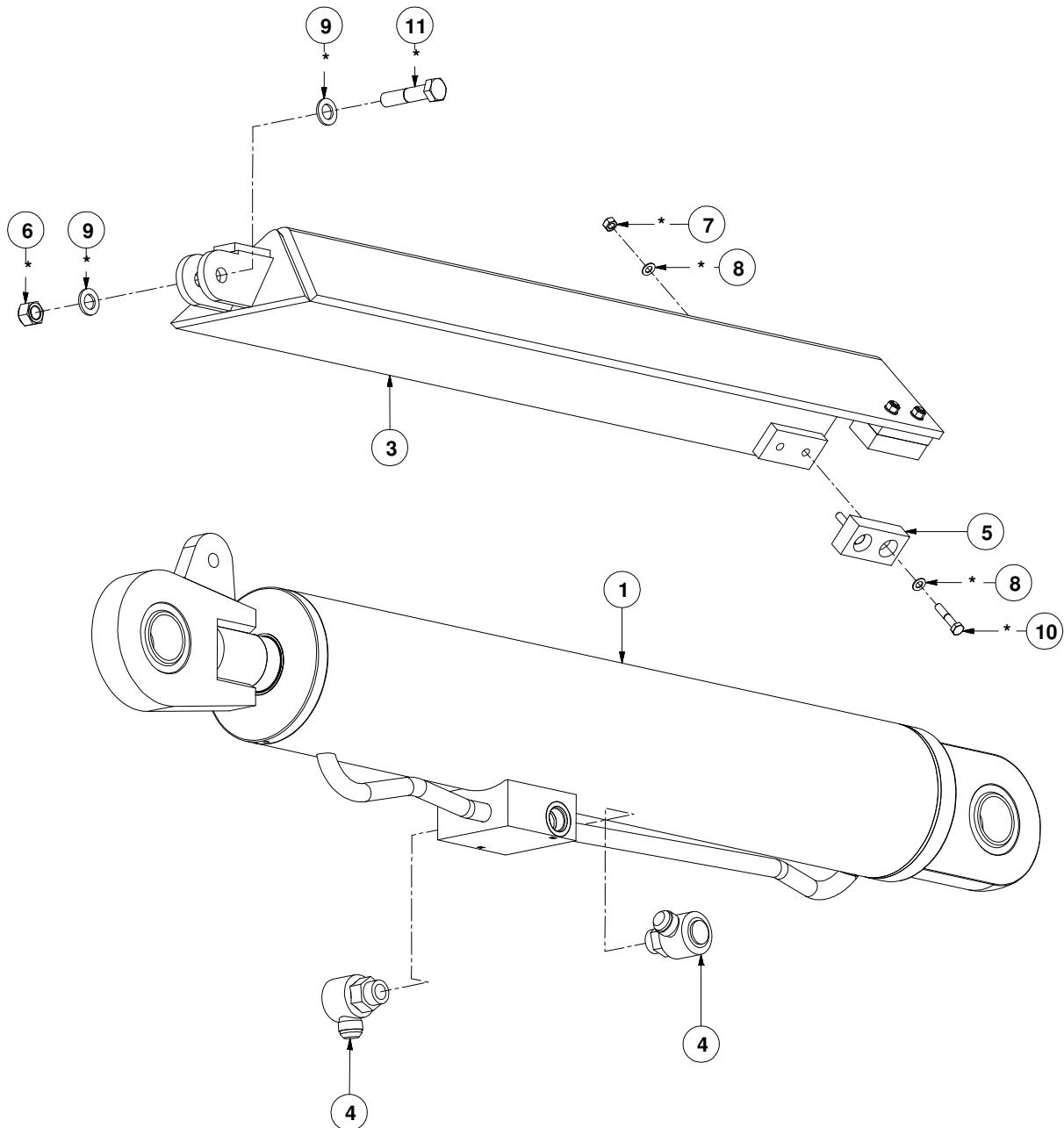
05-14



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-543051**
**BRAKE LINES GROUP**
**05-14**
**REV. 3**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	A2U913-593005		1	ACCUMULATOR
2	A2U913-596127		1	FITTING, BRAKE ACCUMULATOR
3	DB17/0409		1	90 DEG. ELBOW
4	D50/0707		1	90 DEG. ELBOW
5	D50/0909		1	90 DEG. ELBOW
6	D51/0909		1	45 DEG. ELBOW
7	D53/121212		1	TEE
8	DA82/090909		1	TEE
9	D2900-4-100-7		1	HOSE ASSEMBLY
10	D2900-6-80-9		1	HOSE ASSEMBLY
11	D2900-6-140-9		1	HOSE ASSEMBLY
12	D2900-6-160-9		1	HOSE ASSEMBLY
13	A2U220-594445		1	VALVE
14	T8HG32		3	CAPSCREW, SOCKET HEAD
15	W8GF		3	WASHER, FLAT
16	W8GA		3	WASHER, SPRING
17	A2U130-591293		1	MTG. BRACKET
18	A2U130-594273		1	MANIFOLD
19	A2U936-596103		1	FEMALE COUPLING
20	A2U936-596102		1	MALE COUPLING
21	DE53/0909		1	ELBOW
22	D53/0909		2	ELBOW
23	DE17/0407		1	ELBOW
24	D52/1209		3	NIPPLE
25	D15/0609		2	NIPPLE
26	D17/0407		1	ELBOW
27	DA4/0606		1	NIPPLE
28	D2900-4-150-7		1	HOSE ASSEMBLY
29	D2900-6-100-9		1	HOSE ASSEMBLY
30	D2900-6-290-9		1	HOSE ASSEMBLY
31	D62/09		1	PLUG
32	D15/0607		1	NIPPLE
33	D71/060606		1	TEE-PIECE
34	D17/0609		1	ELBOW
35	D52/0809		4	NIPPLE
36	A2U130-591300		2	MOUNTING BRACKET
37	D2900-6-65-9A		2	HOSE ASSEMBLY
38	D2900-6-100-9		2	HOSE ASSEMBLY
39	D2900-6-70-9A		2	HOSE ASSEMBLY
40	D2900-6-180-9		1	HOSE ASSEMBLY
41	D41/0409		6	ELBOW
42	DB47/0409		1	UNION
43	D2900-6-90-9		1	HOSE ASSEMBLY
44	A2U900-594551		1	SECONDARY BRAKE DUMP VALVE
45	A2U900-594591		1	AUTO BRAKE VALVE

**A2U220-550088****CYLINDER GROUP, TILT LS190/ 191****05-15****REV. 2**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-550088****CYLINDER GROUP, TILT LS190/ 191****05-15****REV. 2**

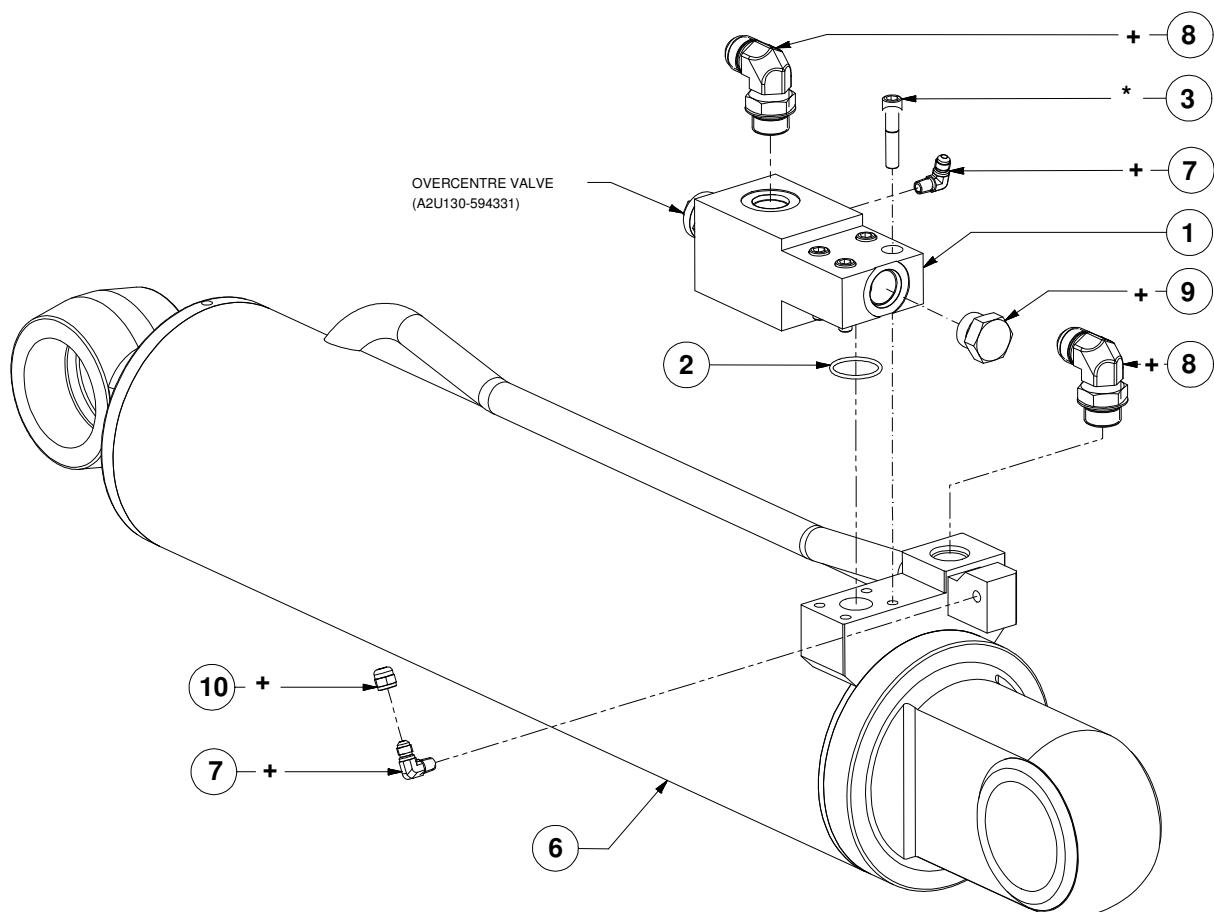
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BD00013423	05-33-02	1	TILT CYLINDER
*	BD00012149		1	Fastener Kit
3	A2U220-591345		1	Guard, Dump Cylinder
4	A2U130-596154		2	SWIVEL ELBOW 1 5/16" UNO x 1 5/16" JIC 90
5	A2U130-591278		2	WEAR PAD
6	455669044*		1	Hex Nyloc Nut, M20 X 2.5
7	455669034*		4	Hex Nyloc Nut, M10 X 1.5
8	450062508*		8	Washer, Flat, 10 mm
9	450061624*		2	Washer, Flat, 20 mm
10	445502808*		4	Bolt Hex Head, M10 x 50mm Long
11	445403079*		1	Bolt Hex Head, M20 x 90mm Long

BD00006965

**LIFT CYLINDER GROUP LS171/ 191**

05-16

REV. 2



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-16**

Sandvik Underground Mining Flameproof Equipment

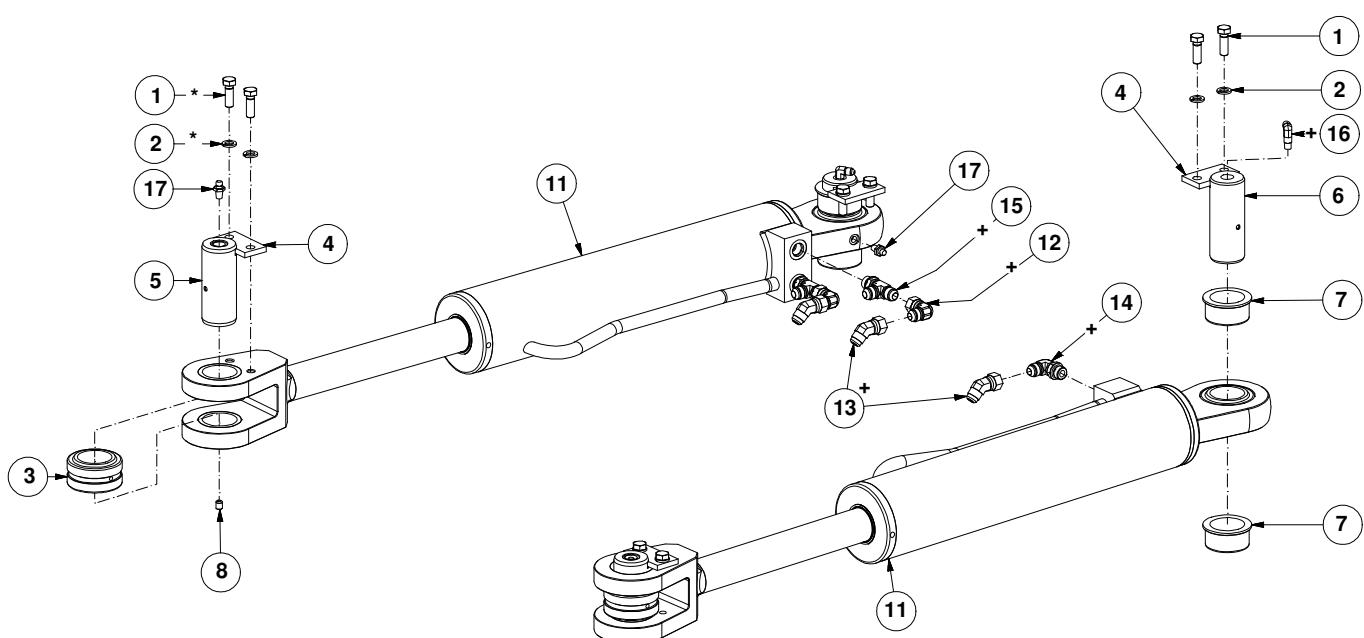
**BD00006965****LIFT CYLINDER GROUP LS171/ 191****05-16****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U130-594333		1	Manifold - Overcentre Valve
2	A2U130-598086		1	O-Ring, 1 5/16" I.D. x 2.61 W.T. (BS 2-125)
3	BD00006972*		4	SHCS, 3/8" x 1 3/4" LG.
+	BD00007775		1	Fitting Kit
*	BD00007776		1	Fastener Kit
6	BD00013422	05-33-03	1	LIFT CYLINDER
7	D17-0207+		2	Elbow 90, 1/8" NPT x 7/16" JIC M/M
8	D53-1717+		2	Elbow 90, 1.1/16" UNO-Ring x 1.1/16" JIC M/M
9	D62-17+		1	Plug, 1.1/16" UNO-Ring
10	D8-07+		1	CAP NUT, 7/16" JIC

**A2U220-550072**  
**REV. 4**

**STEERING CYLINDER GROUP  
LS190/ 191**

**05-17**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-17**

**Sandvik Underground Mining Flameproof Equipment**

**STEERING CYLINDER GROUP  
LS190/ 191**

05-17

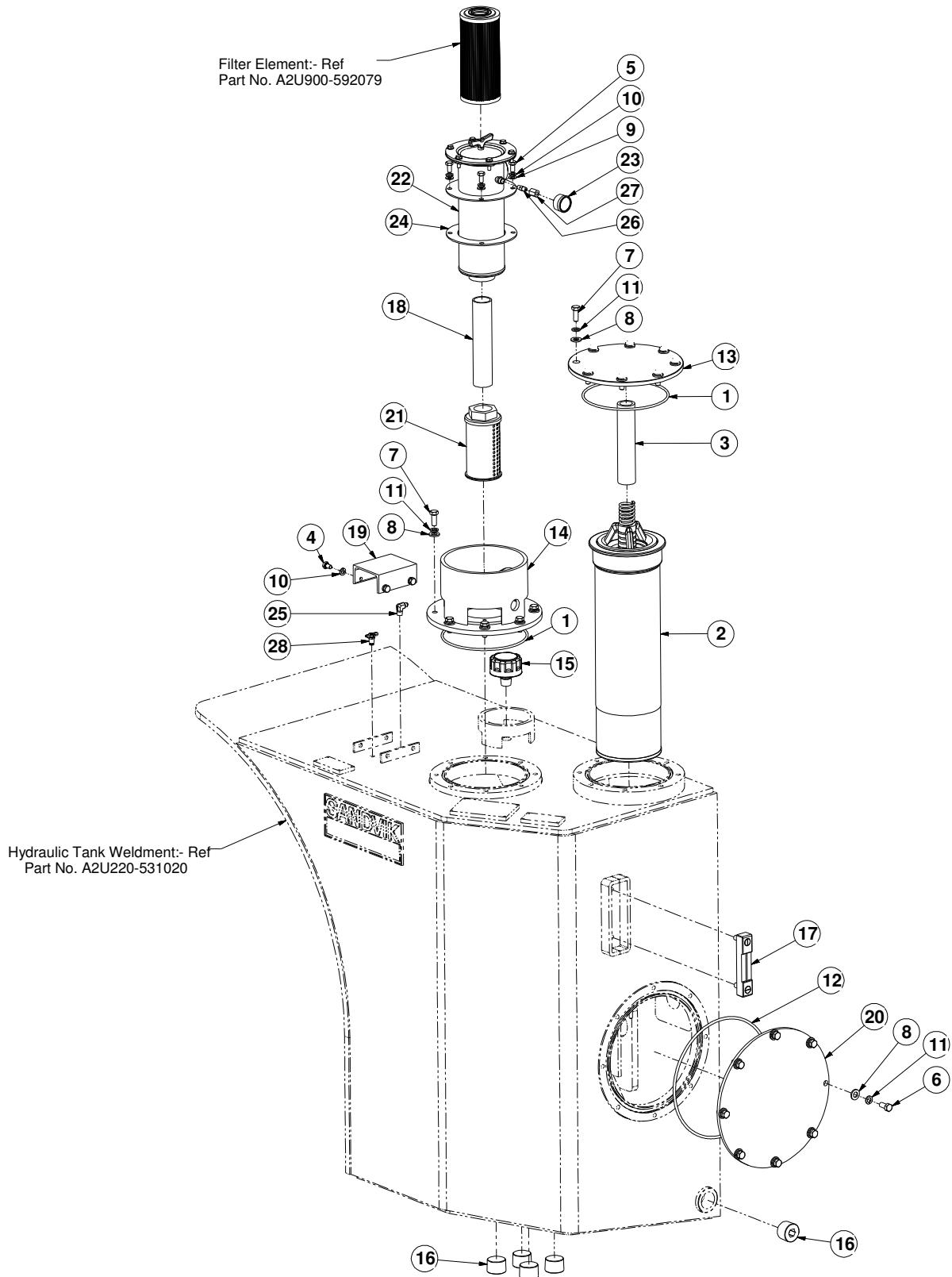
**A2U220-550072****REV. 4**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502845*		8	Bolt Hex Head, M12 X 35Mm Long
2	450081124*		8	Washer, Spring, 12 Mm
3	64400345		2	Bearing, Steering Cylinder
4	A2U130-191798		4	Keeper Plate
5	A2U130-193336		2	Dia 50.8 Bar X 121 Lg
6	A2U220-193388		2	Dia 50.8 Bar X 127 Lg
7	A2U220-194447		4	BUSH, STEER CYLINDER
8	A2U900-392107*		2	Socket Set Screw, M10 X 1.5 X 12Mm Long
+	BD00008080		1	Fitting Kit
*	BD00008082		1	Fastener Kit
11	BD00013424	05-17-11	2	STEERING CYLINDER
12	D50-1212+		2	Adaptor Union 90, 3/4" JIC x 3/4" JIC M/F
13	D51-1212+		4	ADAPTOR UNION 45, 3/4" JIC x 3/4" JIC M/F
14	D53-1212+		2	Elbow 90, 3/4" UNO-Ring x 3/4" JIC M/M
15	D80-121212+		2	TEE 3/4" UNO-Ring x 3/4" JIC x 3/4" JIC M/M/M D80-121212
16	DE17-0207+		2	Elbow 90, 1/8" NPT EXTD x 7/16" JIC M/M
17	P1FG		4	Grease Nipple 1/8"

**A2U220-530038**  
**REV. 3**

**HYDRAULIC TANK GROUP**

**05-19**

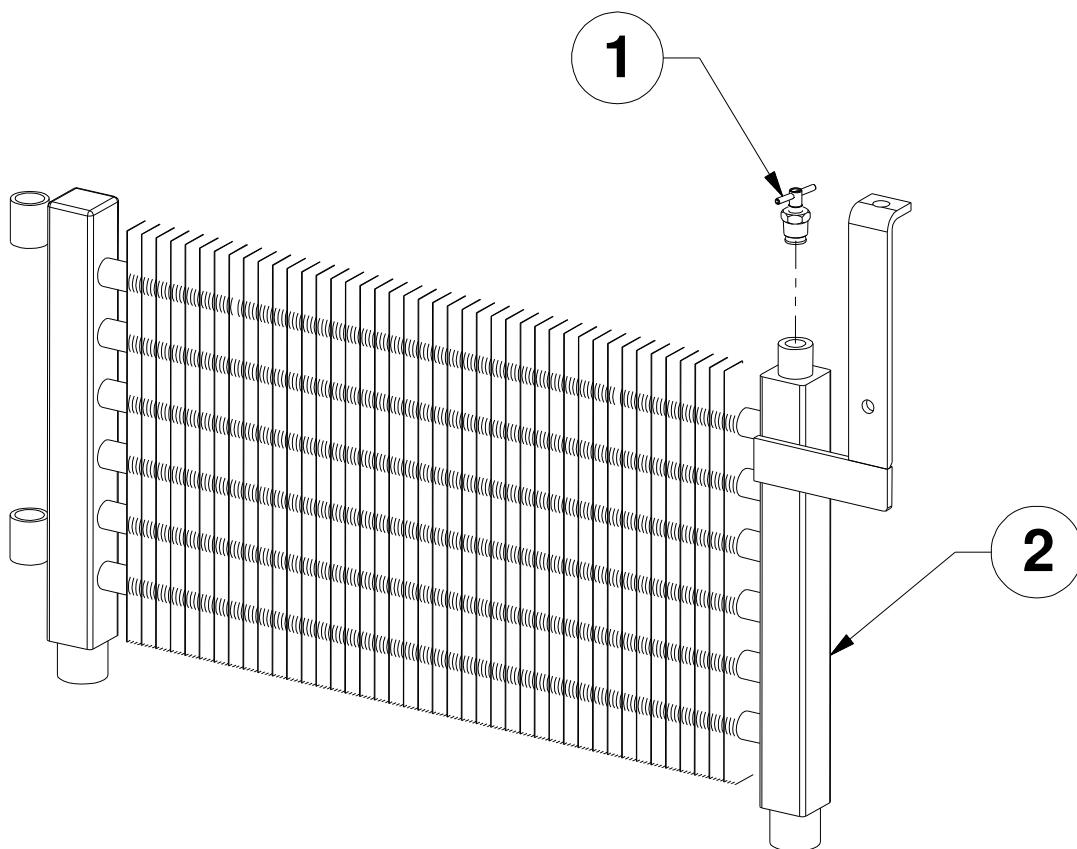


**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**A2U220-530038**
**HYDRAULIC TANK GROUP**
**05-19**
**REV. 3**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	117867	2	'O' Ring	
2	64117900	1	Return Filter	
3	246362	1	Tube - Spacer	
4	445502795	4	Bolt Hex Head M10 x 16mm Long	
5	445502799	4	Bolt Hex Head M10 x 20mm Long	
6	445502842	8	Bolt Hex Head M12 x 25mm Long	
7	445502843	16	Bolt Hex Head M12 x 30mm Long	
8	450061619	24	Washer, Flat 12 mm	
9	450062508	4	Washer, Flat 10 mm	
10	450081022	8	Washer, Spring 10 mm	
11	450081124	24	Washer, Spring 12 mm	
12	64112654	1	O-Ring 12" ID x 12.5" OD x 1/4"	
13	A2U130-197432	1	12 PI X 290 X 290 (Shaped)	
14	A2U220-531033	1	20 PI X 290 X 290 Lg (Shaped)	
15	A2U220-592056	1	Breather Valve Relief .7Bar	
16	A2U900-255336	5	Plug 1 1/2" NPT (SOCKET HEAD) 3000#	
17	A2U900-291249	1	Hyd Fluid Level Ind Parker	
18	A2U900-531034	1	48.3 Od X 3.68 Wt X 225 Lg	
19	A2U900-531035	1	100 Pfc X 50 X 125 Lg	
20	A2U900-532024	1	Cover - Hydraulic Tank	
21	A2U900-534055	1	Diffuser-Oil Return (Uc2202)	
22	A2U900-592078	1	Body Asm-Hydraulic Filter	
23	A2U900-592080	1	Gauge-Pressure 25 Psi	
24	A2U900-597014	1	Gasket-Filter Mtg Flange	
25	D17-0407	1	Elbow 90 1/4" NPT x 7/16" JIC M/M	
26	D4-0202	1	Nipple 1/8" BSPT x 1/8" BSPT	
27	DB67-02	1	Socket 1/8" 1/8" BSPT	
28	P2RVE	1	Bleeder Valve 1/4" NPT	

**A2U900-318004**  
**REV. 1**

**HYDRAULIC OIL COOLER****05-19-01**

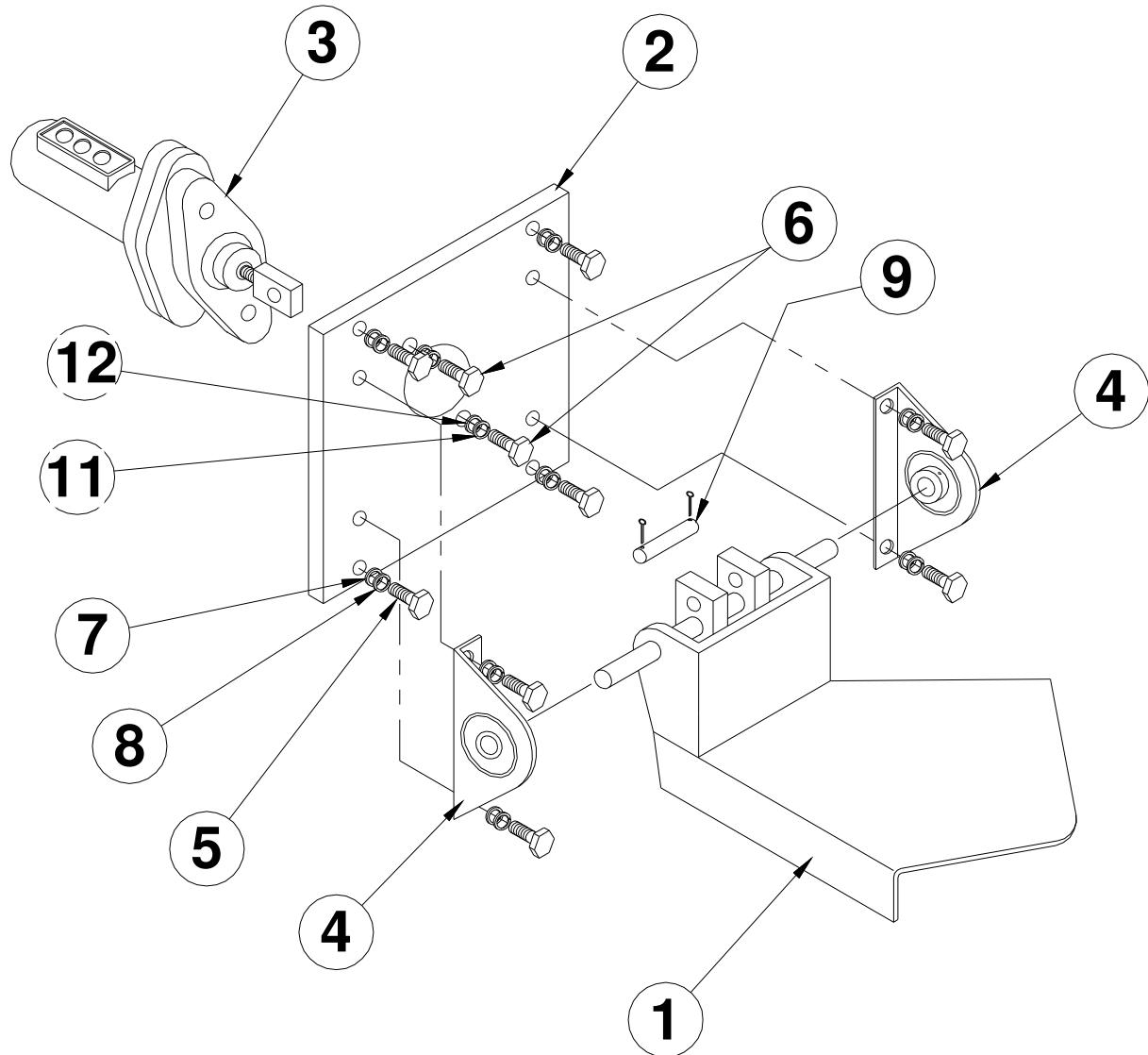
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION    05-19-01**

**Sandvik Underground Mining Flameproof Equipment**

**PARTS MANUAL****A2U900-318004****HYDRAULIC OIL COOLER****05-19-01****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	P3RVD	1	1	Bleeder Valve
2	A2U900-318004		1	Hydraulic Oil Cooler

**A2U220-450055****BRAKE PEDAL GROUP****05-24-01****REV. 1**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-24-01**

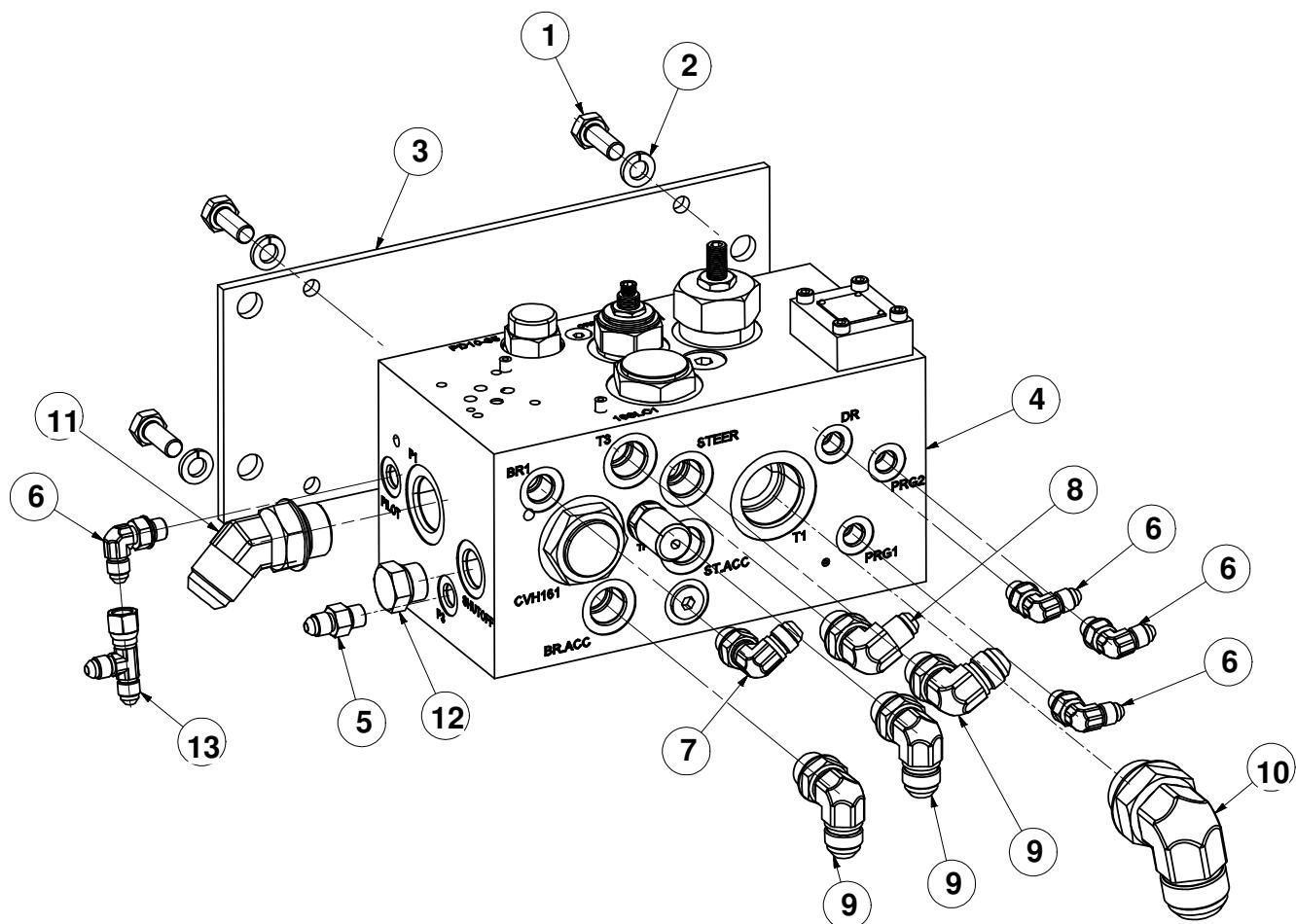
Sandvik Underground Mining Flameproof Equipment

**A2U220-450055****BRAKE PEDAL GROUP****05-24-01****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U130-494012	1	1	BRAKE PEDAL
2	A2U220-491225	1	1	PLATE, MICO BRAKE VALVE MOUNT
3	64544447	1	1	BRAKE VALVE
4	G770	2	2	BEARING
5	445520802	4	4	BOLT, HEX HD M10 x 30 LG
6	T6GG24	2	2	BOLT, HEX HD 3/8" x 1 1/2" UNC
7	450062508	8	8	WASHER, FLAT M10
8	45008112	8	8	WASHER, SPRING M10
9	A2U900-493023	1	1	PIN
10	445502801	4	4	BOLT, HEX HD M10 x 25 LG
11	W6GF	2	2	WASHER, SPRING 3/8"
12	W6GA	2	2	WASHER, FLAT 3/8"

A2U220-590154  
REV. 1**BRAKE/ STEER MANIFOLD GRP**

05-26



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-590154****BRAKE/ STEER MANIFOLD GRP****05-26****REV. 1**

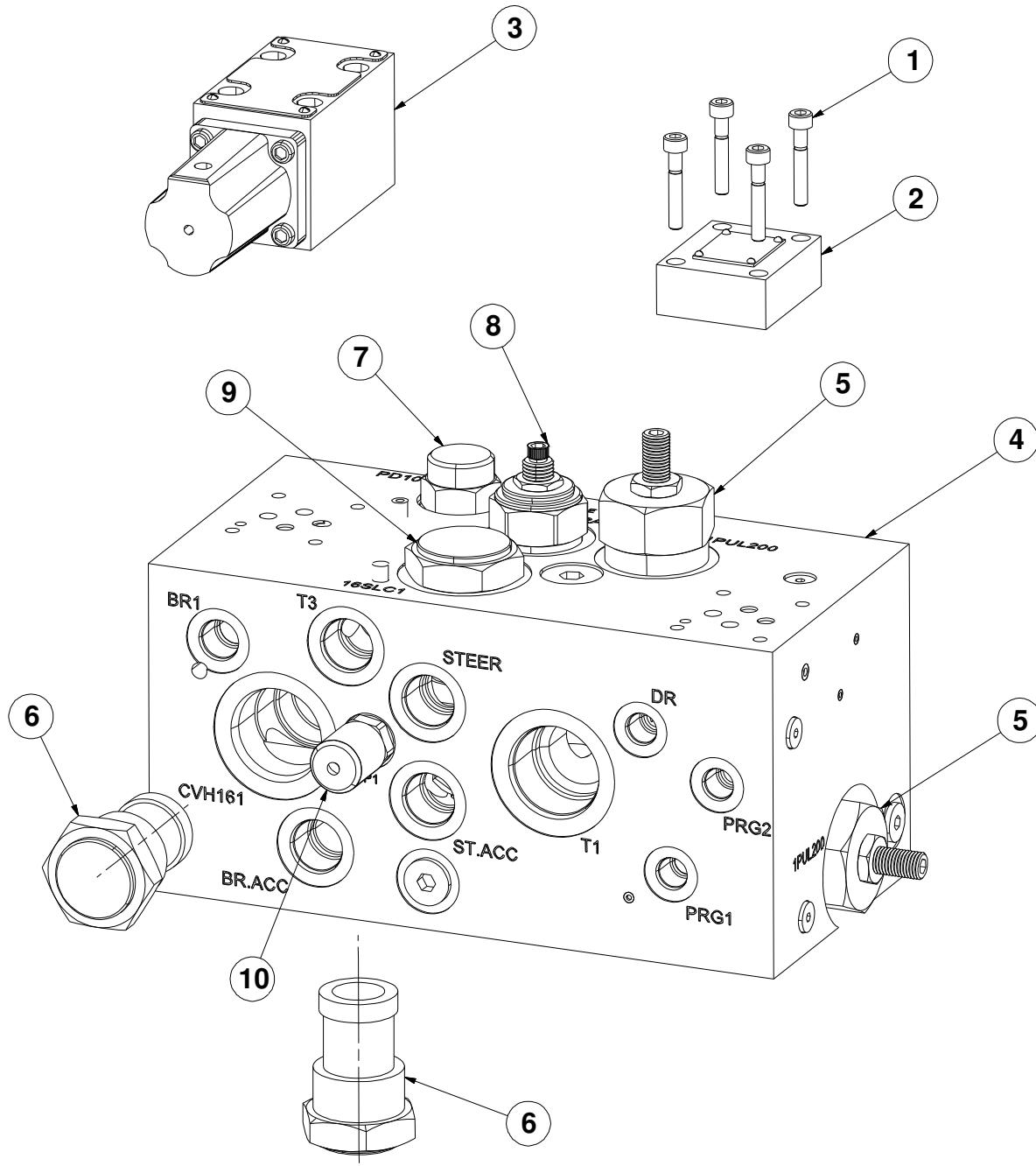
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502801		4	BOLT, HEX HD M10 x 25mm LG
2	450081022		4	WASHER, SPRING 10mm
3	A2U220-591638		1	BRACKET
4	A2U220-594598	05-26-04	1	MANIFOLD ASSEMBLY
5	D52-0707		1	NIPPLE 7/16" UNO_RING x 7/16" JIC
6	D53-0707		4	ELBOW 90, 7/16" UNO_RING x 7/16" JIC M/M
7	D53-0909		1	ELBOW 90, 9/16" UNO_RING x 9/16" JIC M/M
8	D53-1209		1	ELBOW 90, 3/4" UNO_RING x 9/16" JIC M/M
9	D53-1212		3	ELBOW 90, 3/4" UNO_RING x 3/4" JIC M/M
10	D53-2121		1	ELBOW 90, 1.5/16" UNO_RING x 1.5/16" JIC M/M
11	D54-1717		1	ELBOW 45 DEG
12	D62-12		1	PLUG 3/4" UNO_RING
13	DA82-070707		1	TEE PIECE 7/16" JIC x 7/16" JIC F/M/M

**A2U220-594598**

**BRAKE/STEERING MANIFOLD**

**05-26-04**

**REV. 1**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-26-04**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U220-594598****BRAKE/STEERING MANIFOLD****05-26-04****REV. 1**

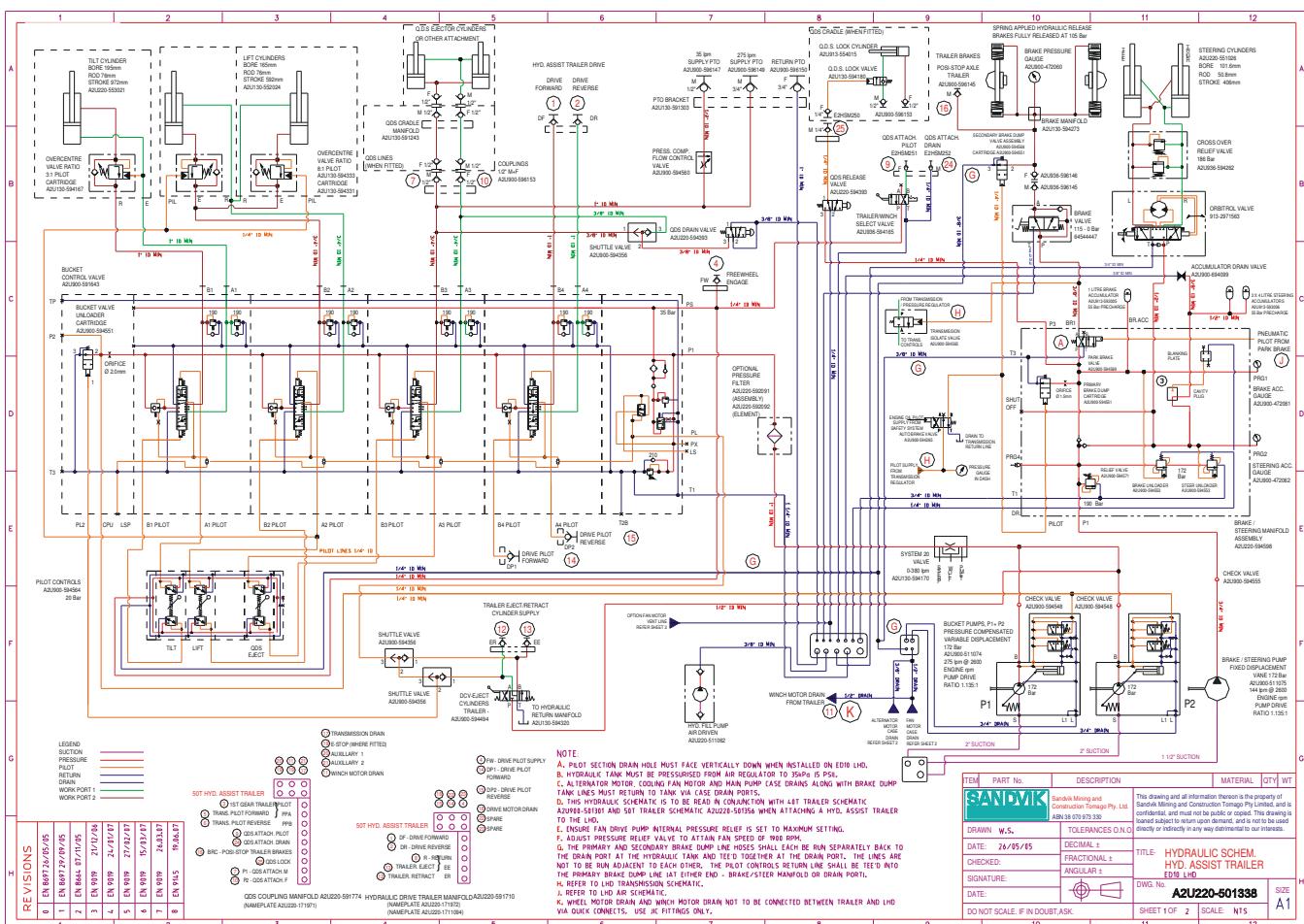
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445208600	4		S.H.C.S. M5 x 30LG
2	A2U220-591711	1		Cetop 3 Blanking Plate
3	A2U220-594589	1		Pneumatic Pilot Valve Dcv
4	A2U900-591642	1		Brake/Steering Manifold Body
5	A2U900-594553	2		Brake/Steering Unloading Valve
6	A2U900-594645	2		Check Valve
7	A2U900-594551	1		Brake Dump Valve
8	A2U900-594571	1		Relief Valve
9	A2U900-594577	1		Vent To Logic Valve
10	A2U900-596201	1		Test Point

**HYD. SCHEM., HYDRAULIC ASSIST  
TRAILER**

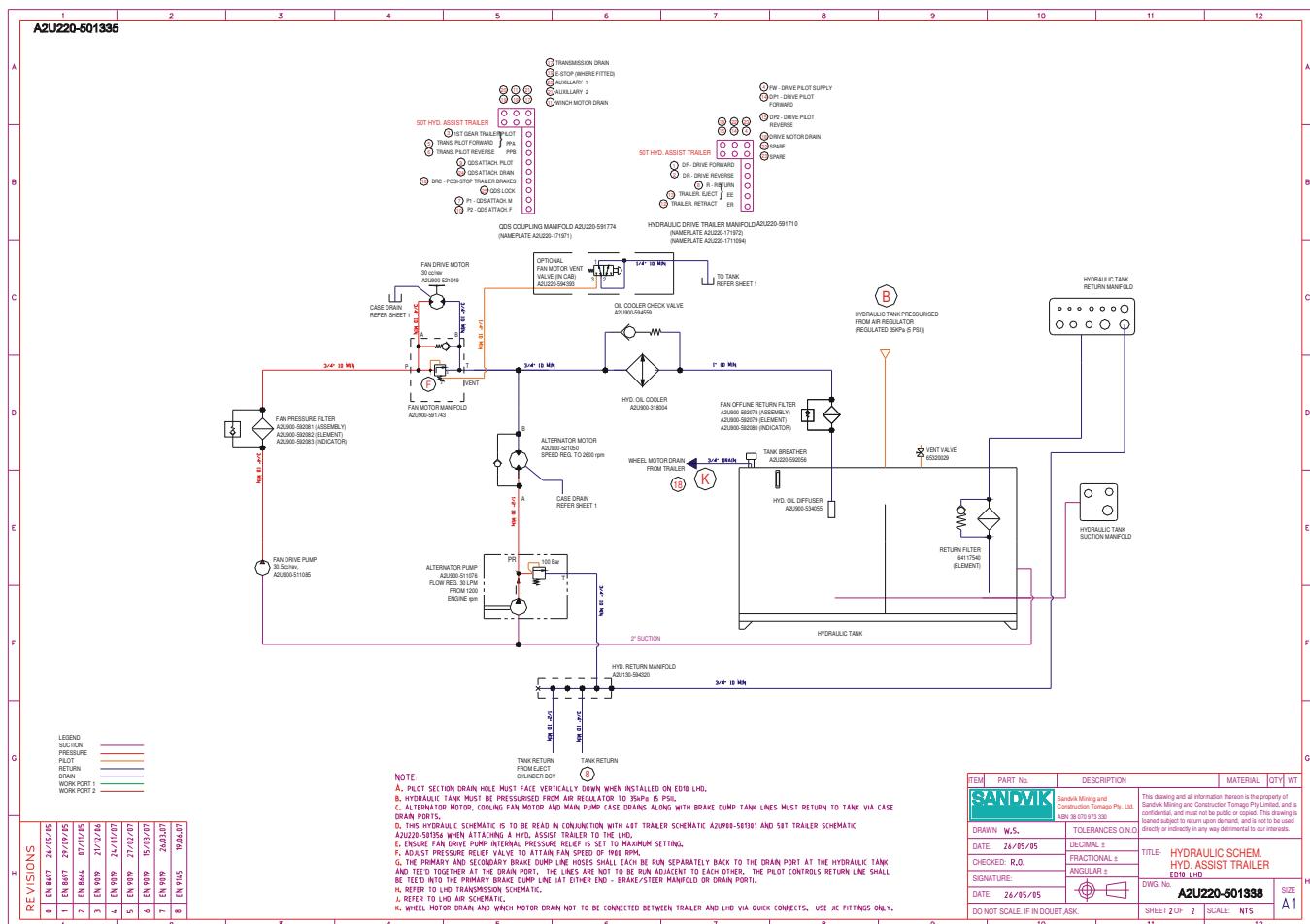
**A2U220-501338**

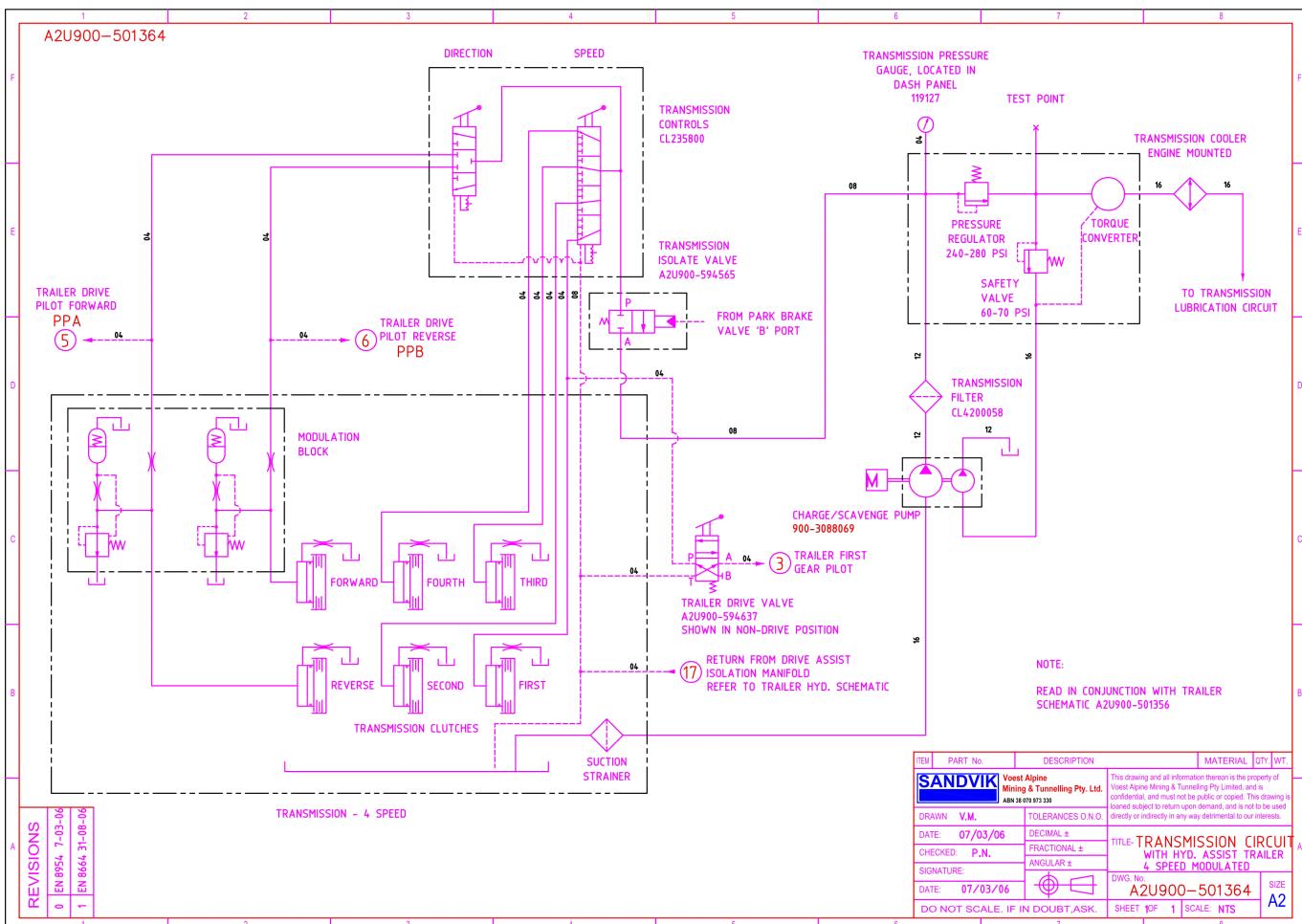
**REV. 8**

**05-28**



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

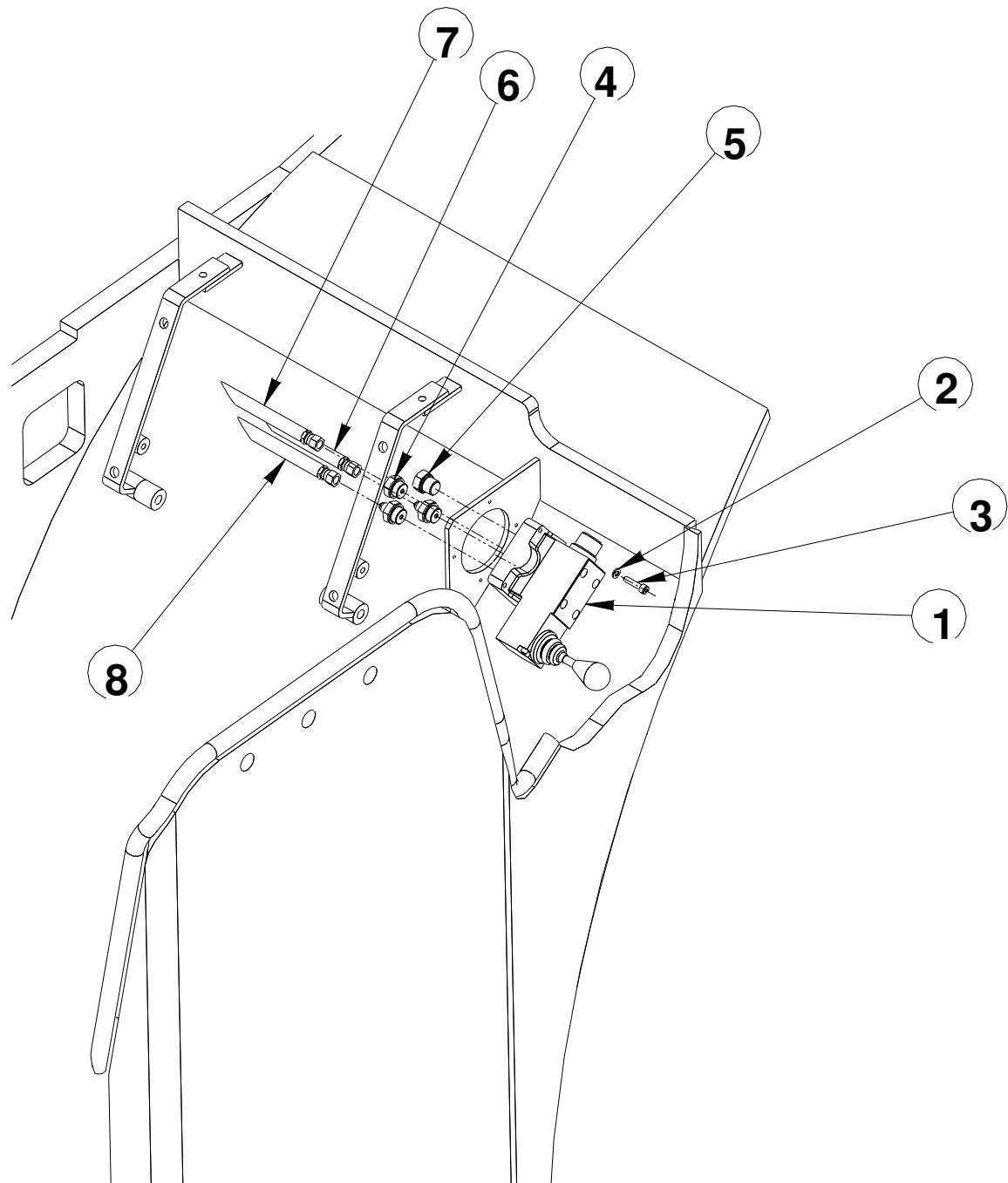
**A2U220-501338**  
**REV. 8**
**HYD. SCHEM., HYDRAULIC ASSIST  
TRAILER**
**05-28**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 05-28**
**Sandvik Underground Mining Flameproof Equipment**

**TRANSMISSION CIRCUIT WITH HYD.  
ASSIST TRAILER**
**05-28**
**A2U900-501364**
**REV. 1**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 05-28**
**Sandvik Underground Mining Flameproof Equipment**

A2U220-590097 TRAILER / WINCH CONTROL GROUP

05-29

REV. 0



ITEM 6: TO G2 PORT ON BUCKET DCV MANIFOLD

ITEM 7: TO TANK

ITEM 8: TO LIFT ARM MANIFOLD (QDS ATTACH. PILOT)

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

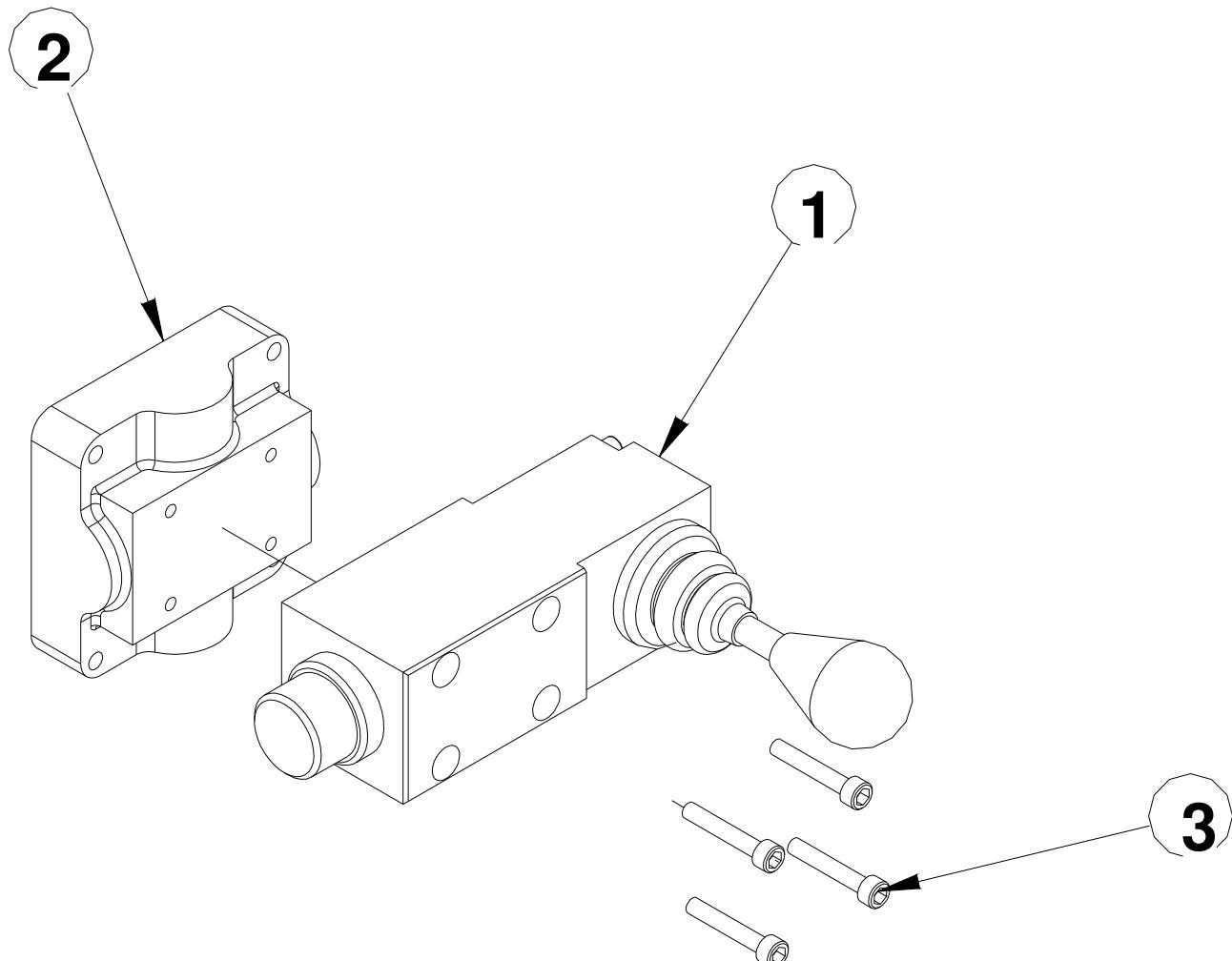
**A2U220-590097 TRAILER / WINCH CONTROL GROUP 05-29****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-594391	05-29-01	1	VALVE, SUBPLATE MOUNT 4/2
2	450081116		4	WASHER, SPRING M6
3	445208662		4	S.H.C.S. M6 x 25 LG
4	D15 47		3	NIPPLE NPT - JIC
5	D259-6		1	PLUG 3/8" BSPP
6	D2900-4-2000-7		1	HYDRAULIC HOSE 7/16" x -07 JIC
7	D2900-4-1750-7		1	HYDRAULIC HOSE 7/16" x -07 JIC
8	D2900-4-350-7		1	HYDRAULIC HOSE 7/16" x -07 JIC

**A2U220-594391**  
**REV. 0**

**VALVE, 4/2 SUBPLATE MOUNT**

**05-29-01**



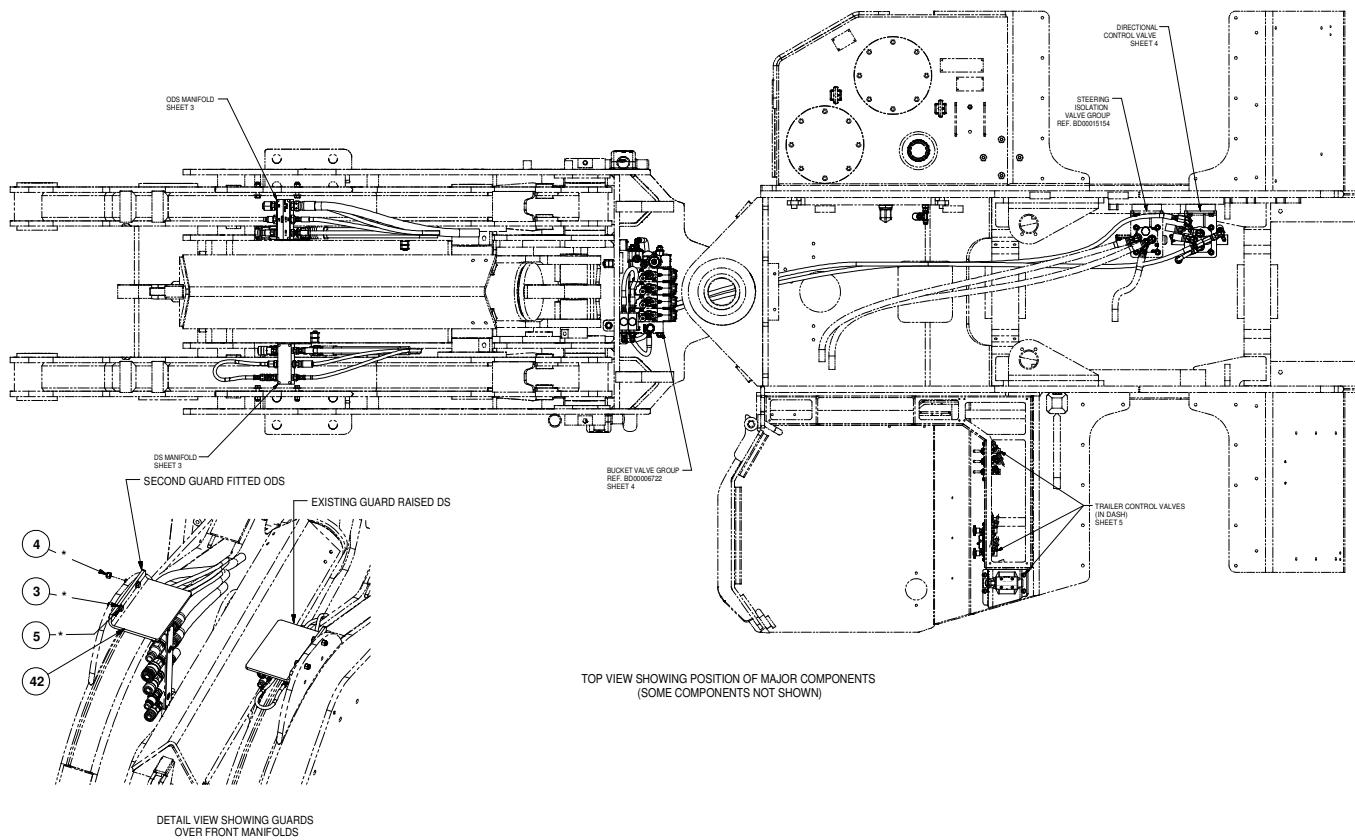
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

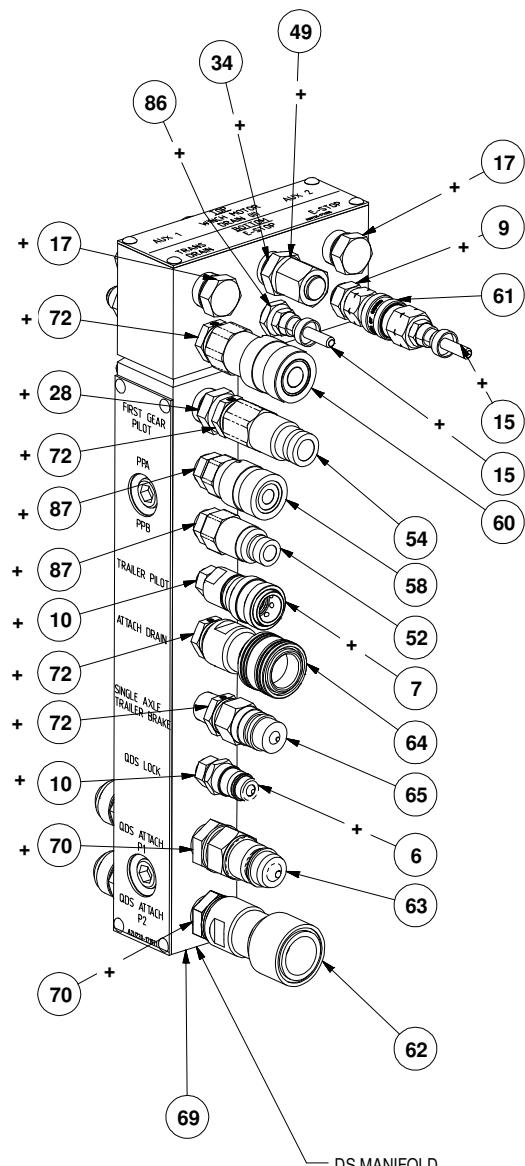
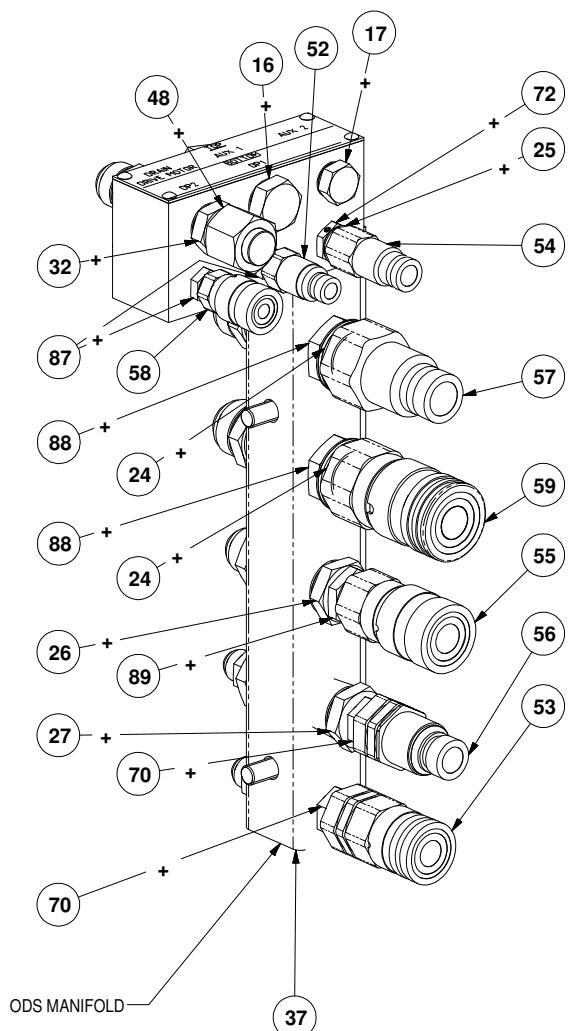
**SECTION    05-29-01**

**Sandvik Underground Mining Flameproof Equipment**

**PARTS MANUAL****A2U220-594391****VALVE, 4/2 SUBPLATE MOUNT****05-29-01****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-594394	1		VALVE, 4/3 D.C.V., DETENTED
2	A2U220-591353	1		SUBPLATE, PTO VALVE
3	A2U220-591361	4		BOLT, KIT M5 x 30 LG

**BD00019267**
**TRAILER HYDRAULIC OPTION LS191**
**05-32**
**REV. 0**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 05-32**
**Sandvik Underground Mining Flameproof Equipment**

**BD00019267**
**TRAILER HYDRAULIC OPTION LS191**
**05-32**
**REV. 0**


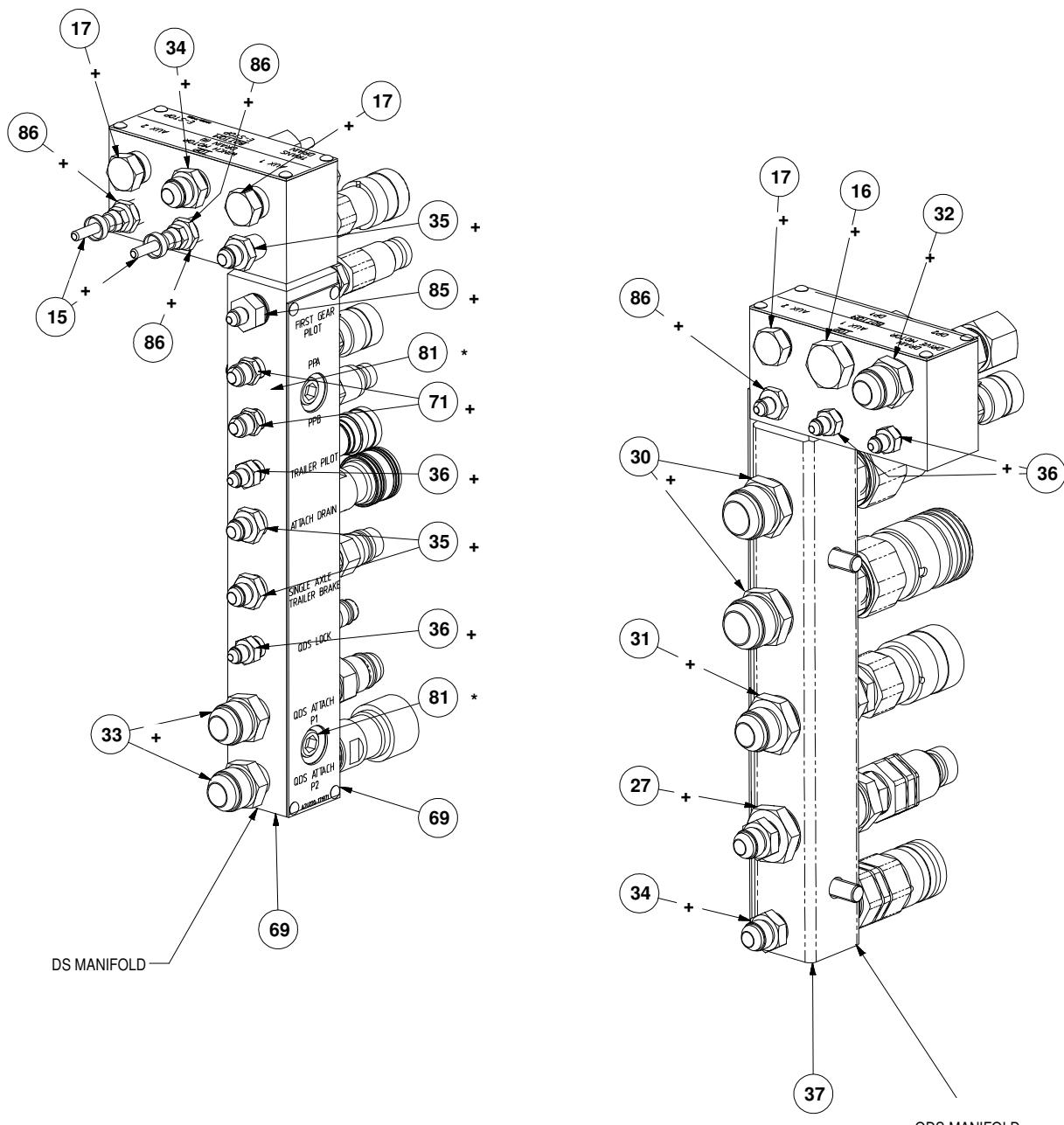
**TRAILER CONNECTION MANIFOLDS  
(ON LIFT ARM - FRONT)**

**FRONT PICTORIAL VIEW**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-32**

Sandvik Underground Mining Flameproof Equipment

**BD00019267**
**TRAILER HYDRAULIC OPTION LS191**
**05-32**
**REV. 0**


**TRAILER CONNECTION MANIFOLDS  
(ON LIFT ARM - FRONT)**

**REAR PICTORIAL VIEW  
HOSES NOT SHOWN**

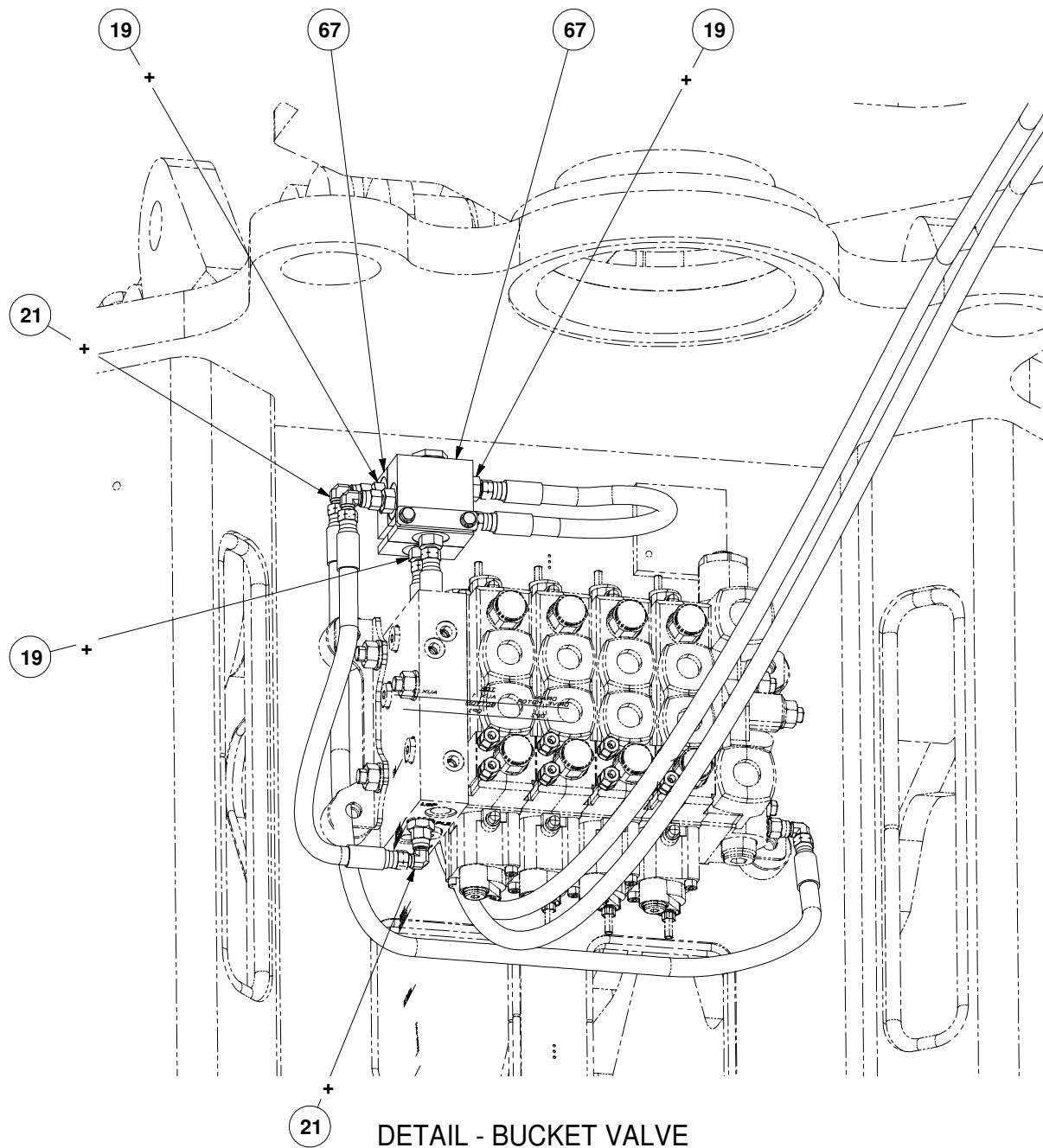
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

BD00019267

**TRAILER HYDRAULIC OPTION LS191**

05-32

REV. 0



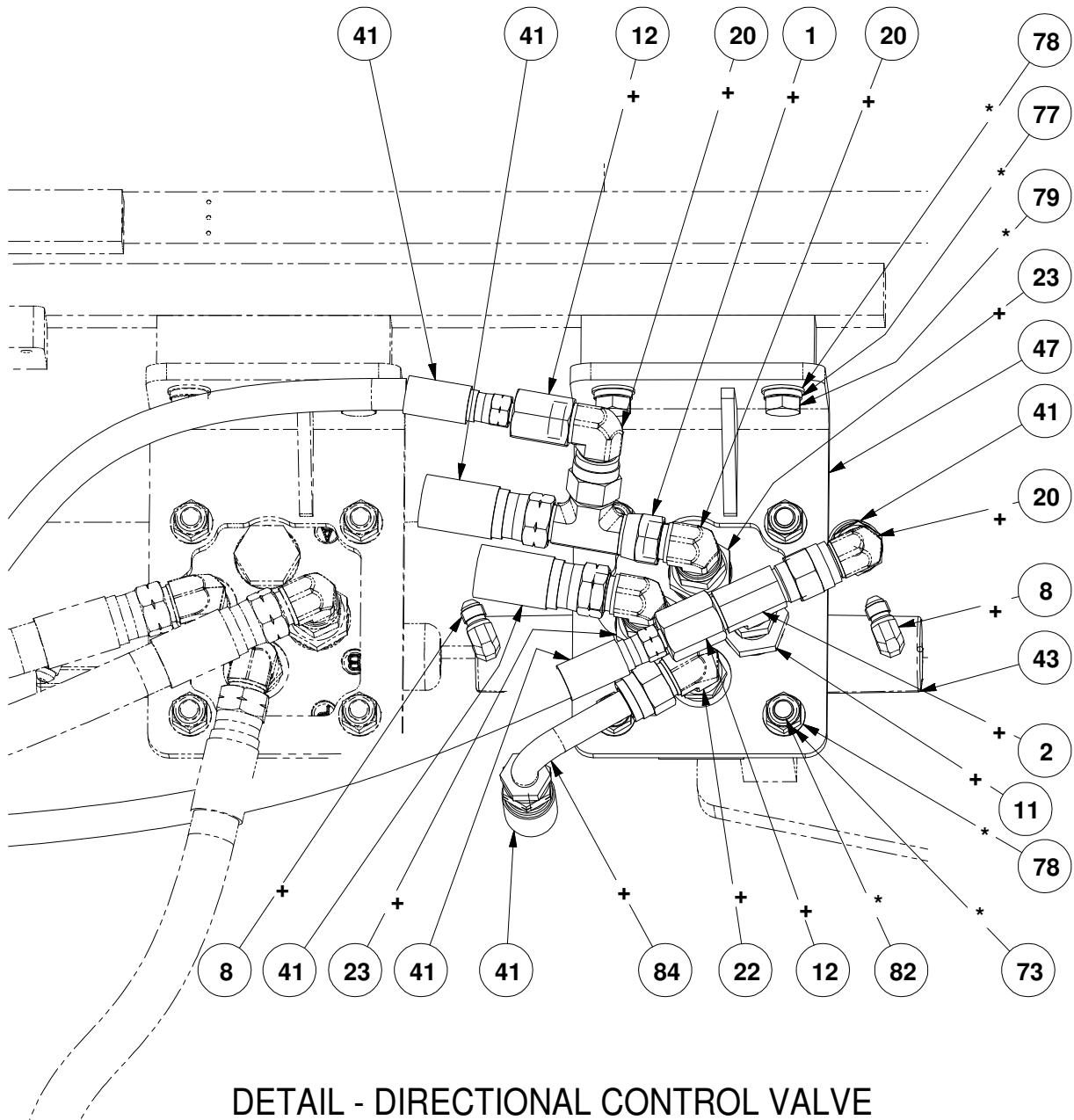
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

BD00019267

**TRAILER HYDRAULIC OPTION LS191**

05-32

REV. 0



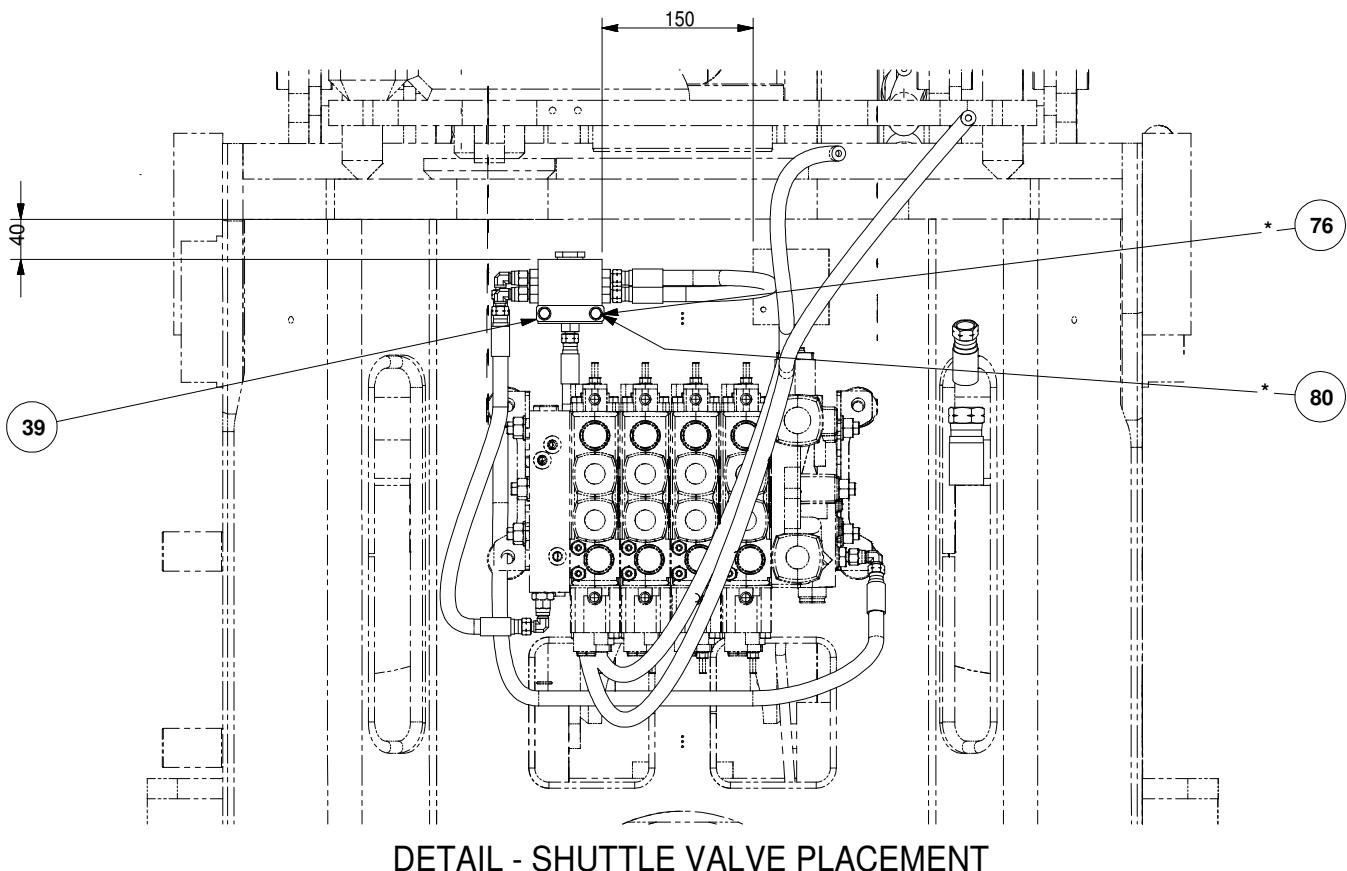
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

BD00019267

**TRAILER HYDRAULIC OPTION LS191**

05-32

REV. 0



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-32**

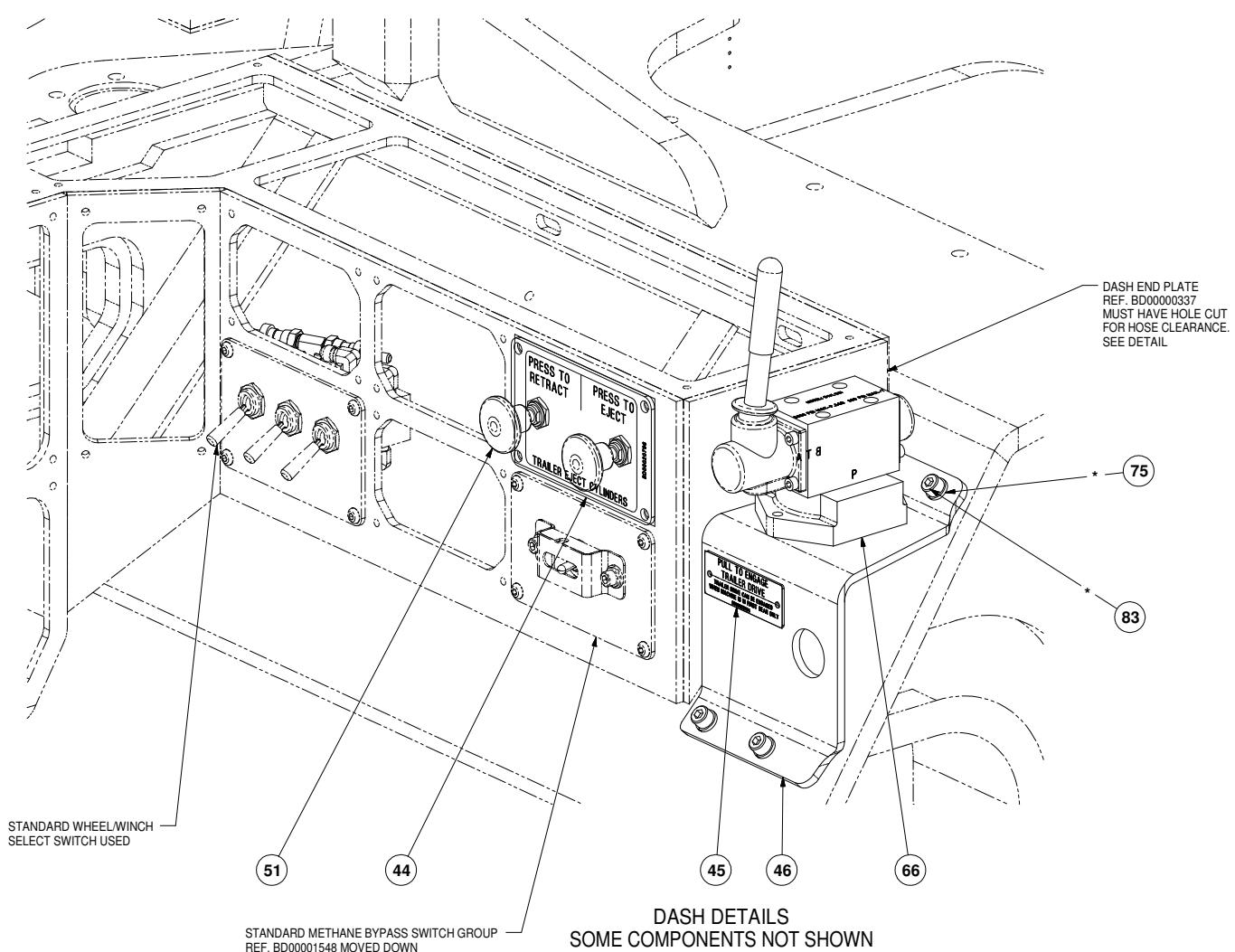
Sandvik Underground Mining Flameproof Equipment

**BD00019267**

**TRAILER HYDRAULIC OPTION LS191**

**05-32**

**REV. 0**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-32**

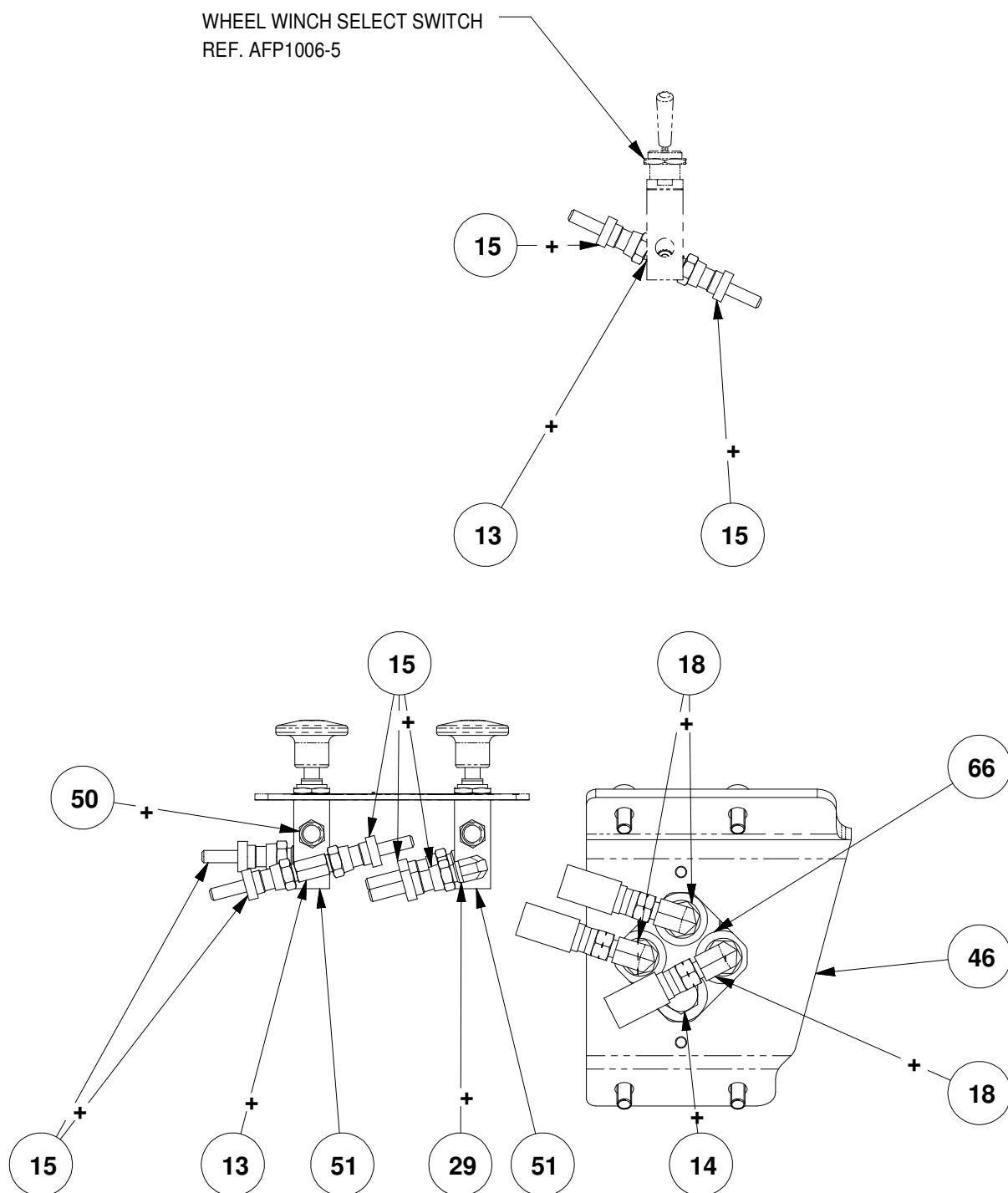
**Sandvik Underground Mining Flameproof Equipment**

**BD00019267**

**TRAILER HYDRAULIC OPTION LS191**

**05-32**

**REV. 0**



DASH DETAILS BOTTOM VIEW  
ONLY TRAILER OPTION COMPONENTS SHOWN

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 05-32**

Sandvik Underground Mining Flameproof Equipment

**BD00019267**
**TRAILER HYDRAULIC OPTION LS191**
**05-32**
**REV. 0**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	SDA82-121212+		1	RUN TEE, JIC MFM, 3/4 x 3/4 x 3/4
2	SD20-121212+		1	TEE, 3/4" JIC M/M/M
3	S0712*		2	WASHER, 12 mm, FLAT
4	S0612175*		2	NYLOC - M12 x 1.75 - STANDARD HEX
5	S0012050B*		2	BOLT, M12 x 1.75 x 50mm LONG, HEX HEAD
6	E2HSM252+		1	Quick Connect, 1/4" NPT Male
7	E2HSM251+		1	Quick Connect, 1/4" NPT Female
8	DB17-0207+		2	ELBOW 90, 1/8" BSPT x 7/16" JIC M/M
9	DA4-0604+		1	Nipple, 3/8" NPT x 1/4" NPT
10	DA4-0404+		2	Nipple, 1/4" NPT x 1/4" NPT
11	DA226-0812+		1	ADAPTOR UNION 1/2" BSPP_M x 3/4" JIC_F
12	DA13-1207+		2	Tube Reducer, 3/4" JIC x 7/16" JIC F/M
13	D79-070702+		2	TEE, 7/16" JIC x 7/16" JIC x 1/8" NPT
14	D62-09+		1	Plug, 9/16" UNO-Ring
15	D605-0704+		11	HOSE END, LOW PRESSURE
16	D60-12+		2	Plug, 3/4" NPT
17	D60-08+		6	Plug, 1/2" NPT
18	D53-0907+		3	Elbow 90, 9/16" UNO-Ring x 7/16" JIC M/M
19	D52-0907+		6	Nipple, 9/16" UNO-Ring x 7/16" JIC
20	D50-1212+		4	Adaptor Union 90, 3/4" JIC x 3/4" JIC M/F
21	D50-0707+		3	Adaptor Union 90, 7/16" JIC x 7/16" JIC M/F
22	D257-0812+		1	ELBOW 90 DEG 1/2" BSPP x 3/4" JIC
23	D256-0812+		2	NIPPLE, 1/2" BSPP O-Ring x 3/4" JIC
24	D215-16+		2	SEAL, METAL, 1" BSPP
25	D215-06+		1	METAL BLACK SEAL 3/8" BSPP
26	D21-1612+		1	Reducing Bush, 1" NPT x 3/4" NPT
27	D21-1608+		2	REDUCER 1" NPT - 1/2" NPT
28	D21-0806+		1	Reducing Bush, 1/2" NPT x 3/8" NPT
29	D17-0207+		3	Elbow 90, 1/8" NPT x 7/16" JIC M/M
30	D15-1621+		2	Nipple, 1" NPT x 1.5/16" JIC
31	D15-1617+		1	Nipple, 1" NPT x 1.1/16" JIC
32	D15-1217+		2	Nipple, 3/4" NPT x 1.1/16" JIC
33	D15-0817+		2	Nipple, 1/2" NPT x 1.1/16" JIC
34	D15-0812+		4	Nipple, 1/2" NPT x 3/4" JIC
35	D15-0609+		3	Nipple, 3/8" NPT x 9/16" JIC
36	D15-0407+		4	Nipple, 1/4" NPT x 7/16" JIC
37	BD00026733	05-32-37	1	MANIFOLD GROUP ODS
*	BD00026176		1	FASTENER KIT
39	BD00025840		1	CLAMP PLATE - SHUTTLE VALVE
+	BD00025734		1	FITTING KIT
41	BD00025733		1	HOSE KIT
42	BD00023327		1	MANIFOLD COVER BRACKET
43	BD00020834		1	DCV CETOP 5 AIR PILOT
44	BD00020796		1	DASH PANEL, TRAILER EJECT
45	BD00020794		1	NAMEPLATE - TRAILER DRIVE
46	BD00020573		1	MOUNT - TRAILER DRIVE VALVE

**BD00019267**
**TRAILER HYDRAULIC OPTION LS191**
**05-32**
**REV. 0**

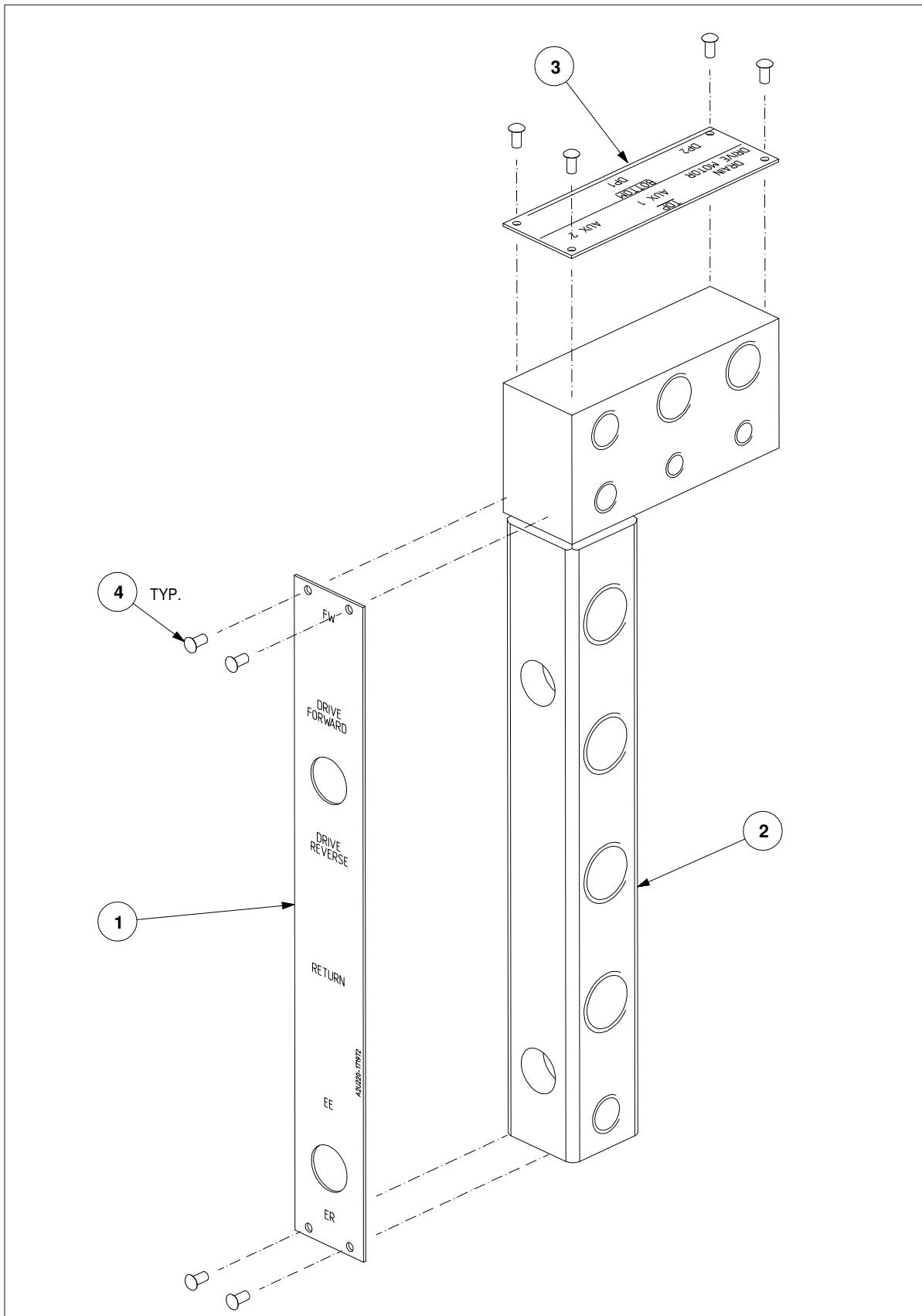
<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
47	BD00015230		1	Bracket
48	AN00007007+		1	Cap Nut 1 1/16" JIC
49	AN00007005+		1	Cap Nut 3/4" JIC
50	AFP1009-9+		2	Air Silencer, 1/8" BSPP
51	AFP1009-3		2	Engine Start Valve
52	A2U900-596233		2	M FIRG14 BSP QUICK CONNECT COUPLING (MALE)
53	A2U900-596232		1	F FIRG12A BSP QUICK CONNECT COUPLING (FEMALE)
54	A2U900-596231		2	M FIRG38 BSP QUICK CONNECT COUPLING (MALE)
55	A2U900-596230		1	F FIRG34B BSP QUICK CONNECT COUPLING (FEMALE)
56	A2U900-596229		1	M FIRG12A BSP QUICK CONNECT COUPLING (MALE)
57	A2U900-596228		1	M FIRG100 BSP QUICK CONNECT COUPLING (MALE)
58	A2U900-596227		2	F FIRG14 BSP QUICK CONNECT COUPLING (FEMALE)
59	A2U900-596226		1	F FIRG100 BSP QUICK CONNECT COUPLING (FEMALE)
60	A2U900-596224		1	F FIRG38 BSP QUICK CONNECT COUPLING (FEMALE)
61	A2U900-596192		1	1/4" Quick Coupler Pair (No Valve)
62	A2U900-596148		1	Quick Connect 1/2" BSPP Female
63	A2U900-596147		1	Quick Connect 1/2" BSPP Male
64	A2U900-596146		1	Quick Connect 3/8" BSPP Female
65	A2U900-596145		1	Quick Connect, 3/8" BSPP Male
66	A2U900-594637		1	VALVE ASSEMBLY
67	A2U900-594356		2	SHUTTLE VALVE
68	A2U900-196175		16	DRIVE RIVET 6 GGE 3/8
69	A2U220-590201	05-32-69	1	MANIFOLD GROUP DS
70	8-8FMK4-S+		5	Nipple, 1/2" NPT x 1/2" BSPP
71	6_FTX-S+		2	NIPPLE 1/4 NPT x 3/8 JIC
72	6-6FMK4S+		5	NIPPLE, 3/8" BSPP x 3/8" NPT
73	455669034*		4	Hex Nyloc Nut, M10 X 1.5
74	450081124*		4	Washer, Spring, 12 mm
75	450081120*		4	Washer, Spring, 8 mm
76	450081116*		2	Washer, Spring, 6 mm
77	450081022*		2	Washer, Spring, 10 mm
78	450062508*		6	Washer, Flat, 10 mm
79	445402810*		2	Bolt Hex Head, M10 x 60mm Long
80	445402675*		2	Bolt Hex Head, M6 x 80mm Long
81	445210850*		4	SHCS M12 X 55LG
82	445208806*		4	SHCS M10 X 40LG
83	445208759*		4	SHCS M8 X 20LG
84	41T3-8-8+		1	ELBOW, LONG DROP, 3/4" JIC - 3/4" JIC
85	4-8FTX-S+		1	NIPPLE 1/2"NPT x 1/4" JIC
86	4-6_FTX-S+		4	NIPPLE 3/8"NPT x 1/4" JIC
87	4-4FMK4S+		4	NIPPLE 1/4"NPT x 1/4"BSPP
88	16FMK4S+		2	NIPPLE, 1" BSPP O-Ring x 1" NPT
89	12FMK4+		1	NIPPLE 3/4"NPT - 3/4"BSPP

BD00026733

**MANIFOLD GROUP ODS**

05-32-37

REV. 0



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS



## PARTS MANUAL

BD00026733

### MANIFOLD GROUP ODS

05-32-37

REV. 0

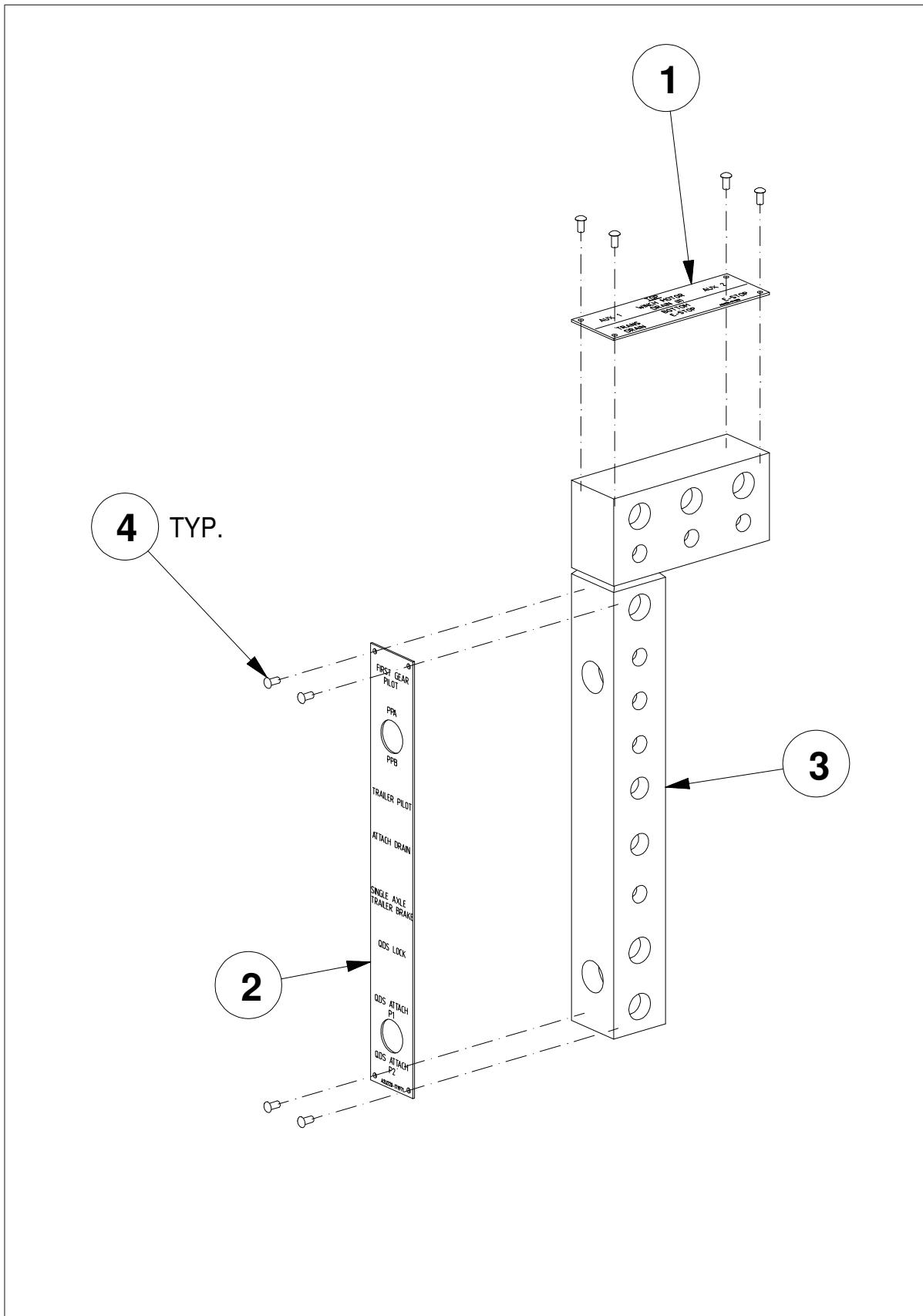
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-171972	1		NAME PLATE - MANIFOLD TRAILER CONNECTION
2	A2U220-591710	1		MANIFOLD, 50T TRAILER
3	A2U900-1711094	1		NAMEPLATE - TOP MANIFOLD TRAILER CONNECTIONS
4	A2U900-196175	8		DRIVE RIVET

A2U220-590201

**MANIFOLD GROUP DS**

05-32-69

REV. 1



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**PARTS MANUAL****A2U220-590201****MANIFOLD GROUP DS****05-32-69****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-1711255	1	1	1.6 Plate x 50 x 150
2	A2U220-171971	1	1	1.6 PL x 50 x 350
3	A2U220-591774	1	1	Manifold
4	A2U900-196175	8	8	DRIVE RIVET



## PARTS MANUAL

**BD00003122**

**CYLINDER KIT LS190/ 191**

**05-33**

**REV. 2**

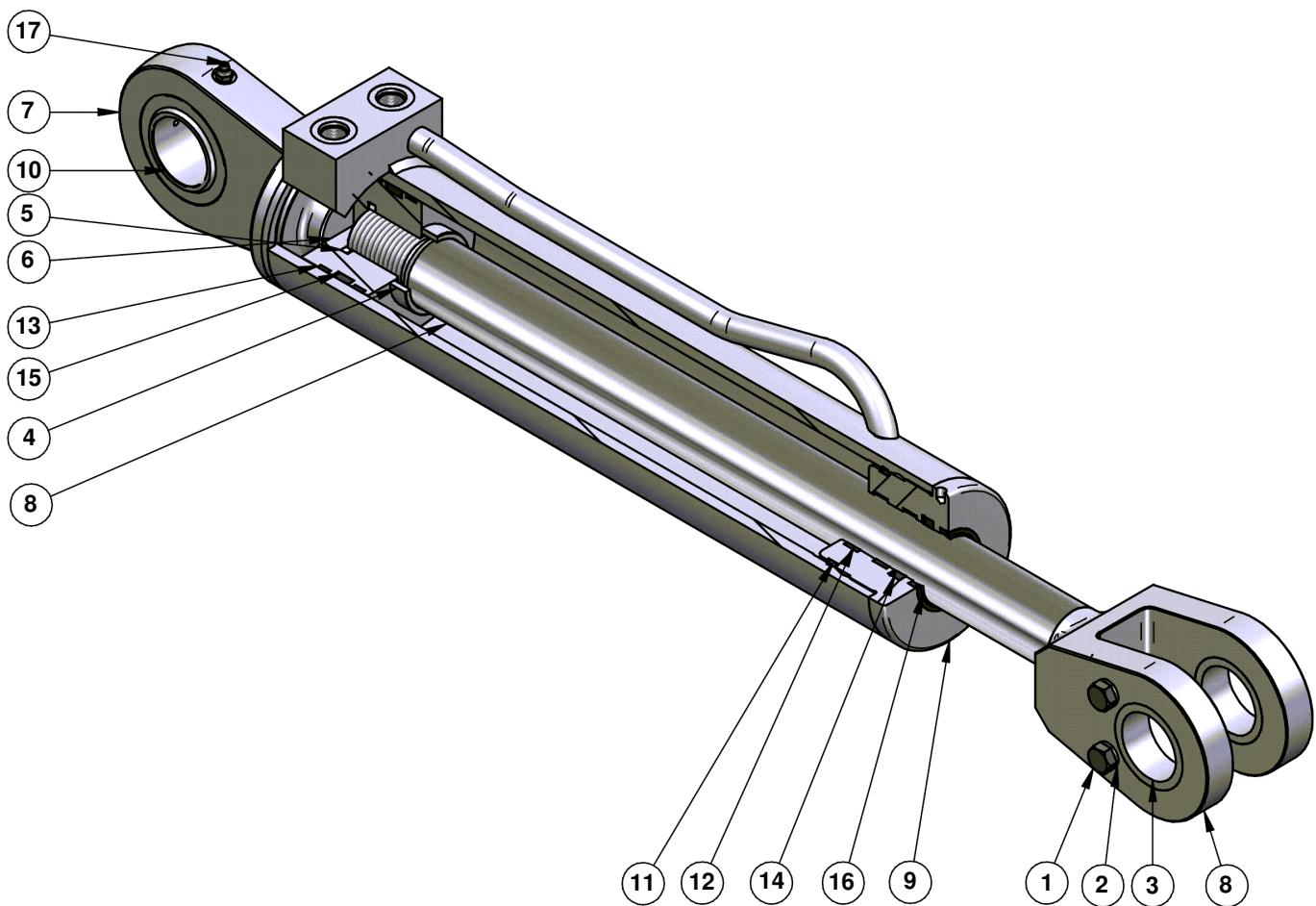
ITEM	PART NO	PAGE	QTY	DESCRIPTION
	BD00013424	05-17-11	2	STEERING CYLINDER
	BD00013423	05-33-02	1	TILT CYLINDER
	BD00013422	05-33-03	2	LIFT CYLINDER
	BD00013421	05-33-04	1	QDS LOCK CYLINDER

BD00013424

**STEERING CYLINDER ASSEMBLY**

05-33-01

REV. 0



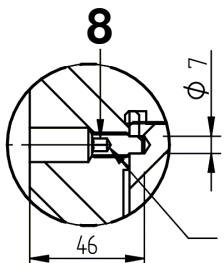
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 05-33-01

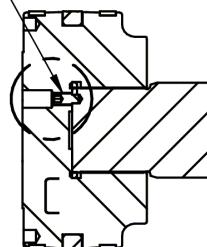
Sandvik Underground Mining Flameproof Equipment

**BD00013424****STEERING CYLINDER ASSEMBLY****05-33-01****REV. 0**

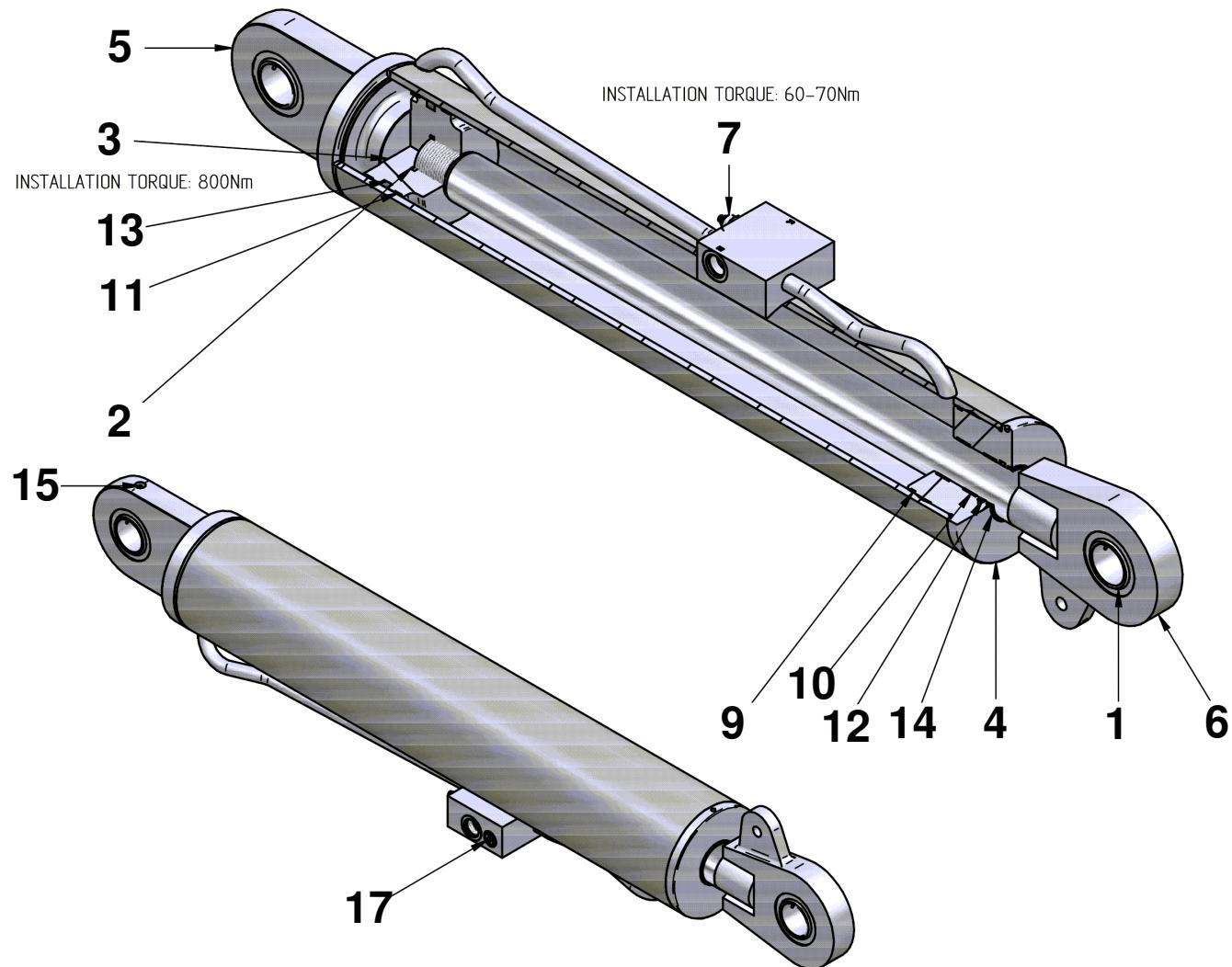
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502843	2		Hex Head Set Screw, M12 x 30
2	450081124	2		Spring Washer, M12
3	A2U130-194385	2		Bush, Steel, 2.0in x 2.5in x 1.0in
4	BD00013633	1		Stop Tube
5	BD00013639	1		Nylock Ring, 1.75in
6	BD00013644	1		Piston, Threaded, HD, 4.0in Bore x 2.0in Rod
7	BD00013645	1		Tube Assembly
8	BD00013646	1		Rod Assembly
9	BD00013650	1		Gland, Threaded, HD, 4.0in Bore x 2.0in Rod
10	G746	1		Plain Spherical Bearing
11	HS155004	1		Seal, Static, Type 155, 100-105
12	HS506410	2		Bearing Ring, Type 506, 2.25in x 0.5in x 0.125in
13	HS506508	2		Bearing Ring, Type 506, 4.0in x 0.375in x 0.125in
14	HS621059	1		Seal, Rod, Type 621, 2.0in x 2.5in x 0.375in
15	HS735058	1		Seal, Piston, DA, Type 735, 4.0in
16	HS842101	1		Wiper, Rod, Type 842, 2.0in
17	P1FG	1		Grease Nipple, 1/8in NPT

**BD00013423**
**TILT CYLINDER ASSEMBLY**
**05-33-02**
**REV. 1**
**SECTION THRU PISTON CONNECTION**


1. ASSEMBLE GLAND SEALS AND FIT TO ROD.
2. ASSEMBLE PISTON SEALS AND FIT TO ROD.
3. TORQUE PISTON AS NOTED.
4. DRILL HOLE IN ROD END AS NOTED.
5. FIT SET SCREW AS NOTED.
6. COMPLETE CYLINDER ASSEMBLY.



Socket Set Screw, Dog Point, M10 x 20  
DEGREASE PRIOR TO ASSEMBLY  
APPLY LOCTITE 5452 THREAD SEAL  
TORQUE TO 30-35Nm

**DETAIL C**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**BD00013423****TILT CYLINDER ASSEMBLY****05-33-02****REV. 1**

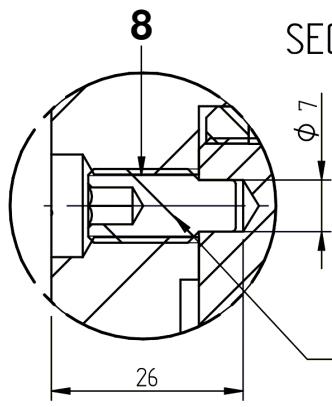
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	64101552	2	1	Plain Spherical Bearing, 2.5in
2	BD00013672	1	1	Piston Locking Ring, 2.75in
3	BD00013699	1	1	Piston, Threaded, HD, 7.5in Bore x 3.0in Rod
4	BD00013700	1	1	Head, Threaded, HD, 7.5in Bore x 3.0in Rod
5	BD00014033	1	1	Tube Assembly
6	BD00014034	1	1	Rod Assembly
7	BD00015050	1	1	Counterbalance Valve, 3-Port, Atmospherically Vented, 3:1 Pilot Ratio, 3000psi (CAEA-LHN)
8	BD00020571	1	1	Socket Set Screw, Dog Point, M10 x 20
9	HS155014	1	1	Seal, Static, Type 155, 188-197
10	HS506426	2	1	Bearing Ring, Type 506, 3.25in x 1.0in x 0.125in
11	HS506537	2	1	Bearing Ring, Type 506, 7.5in x 0.5in x 0.125in
12	HS621066	1	1	Seal, Rod, Type 621, 3.0in x 3.5in x 0.375in
13	HS735080	1	1	Seal, Piston, DA, Type 735, 7.5in
14	HS842104	1	1	Wiper, Rod, Type 842, 3.0in
15	P1FG	1	1	Grease Nipple, 1/8in NPT
16	SBS367N70	1	1	O-Ring, 367 N70
17	SD62-12	1	1	Plug, Socket Hex, 3/4 UN-O

BD00013422

## LIFT CYLINDER ASSEMBLY

05-33-03

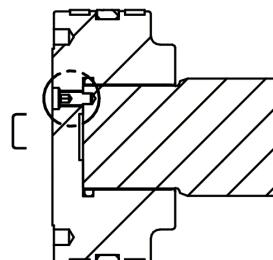
REV. 2



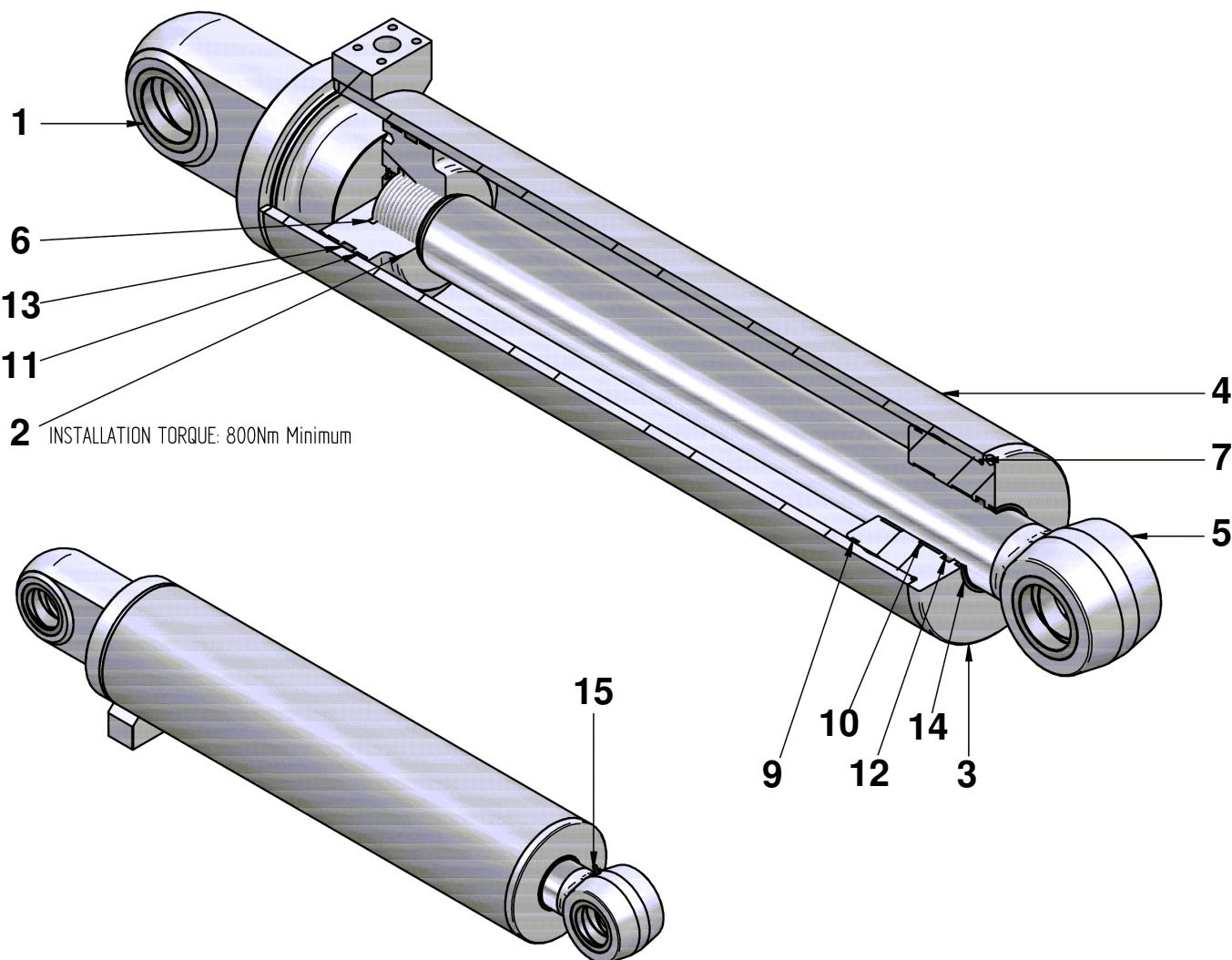
SECTION THRU PISTON CONNECTION

1. Assemble Gland Seals and Fit to Rod
2. Assemble Piston Seals and Fit to Rod
3. Torque Piston to 800 Nm Minimum
4. Drill Hole in Rod End as Noted
5. Fit Set Screw as Noted
6. Complete Cylinder Assembly

Socket Set Screw, Dog Point, M10 x 20  
Degrease Prior to Assembly  
Apply Loctite 5452 Thread Seal  
Torque to 30-35 Nm



DETAIL C



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 05-33-03

Sandvik Underground Mining Flameproof Equipment

**BD00013422****LIFT CYLINDER ASSEMBLY****05-33-03****REV. 2**

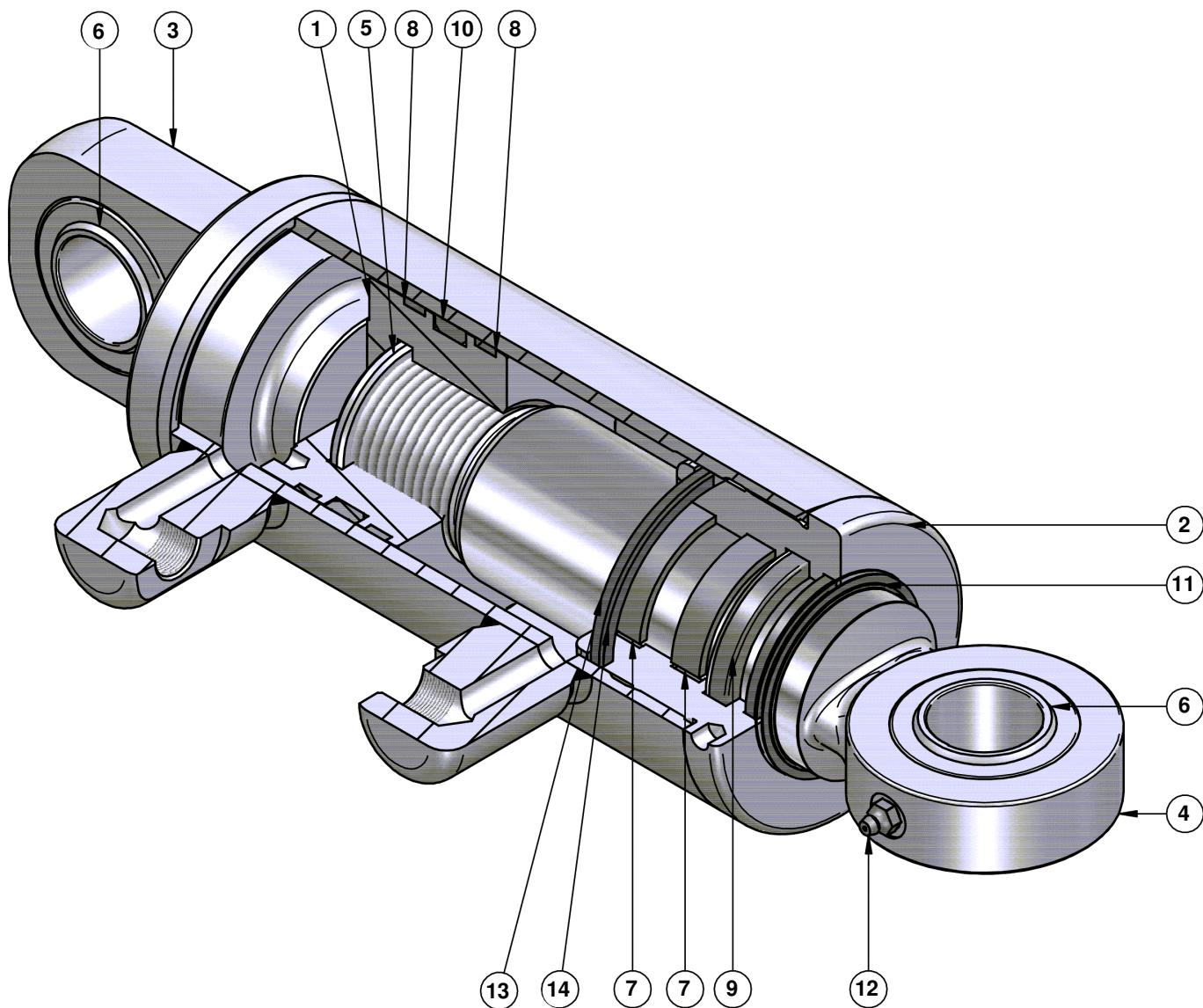
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U130-194369	2	1	Bush, Bronze, 2.5in x3.25in x 3.5in
2	BD00013664	1	1	Piston, Threaded, HD, 6.5in Bore x 3.0in Rod
3	BD00013665	1	1	Head, Threaded, HD, 6.5in Bore x 3.0in Rod
4	BD00013668	1	1	Tube Assembly
5	BD00013669	1	1	Rod Assembly
6	BD00013672	1	1	Piston Locking Ring, 2.75in
7	BD00020523	1	1	O-Ring, Metric, 165.0 x 5.0 N70
8	BD00020571	1	1	Socket Set Screw, Dog Point, M10 x 20
9	HS155012	1	1	Seal, Static, Type 155, 165-174
10	HS506426	2	2	Bearing Ring, Type 506, 3.25in x 1.0in x 0.125in
11	HS506533	2	2	Bearing Ring, Type 506, 6.5in x 0.5in x 0.125in
12	HS621066	1	1	Seal, Rod, Type 621, 3.0in x 3.5in x 0.375in
13	HS735076	1	1	Seal, Piston, DA, Type 735, 6.5in
14	HS842104	1	1	Wiper, Rod, Type 842, 3.0in
15	P1FG	1	1	Grease Nipple, 1/8in NPT

BD00013421

**QDS LOCK CYLINDER ASSEMBLY**

05-33-04

REV. 0



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 05-33-04

Sandvik Underground Mining Flameproof Equipment

**BD00013421****QDS LOCK CYLINDER ASSEMBLY****05-33-04****REV. 0**

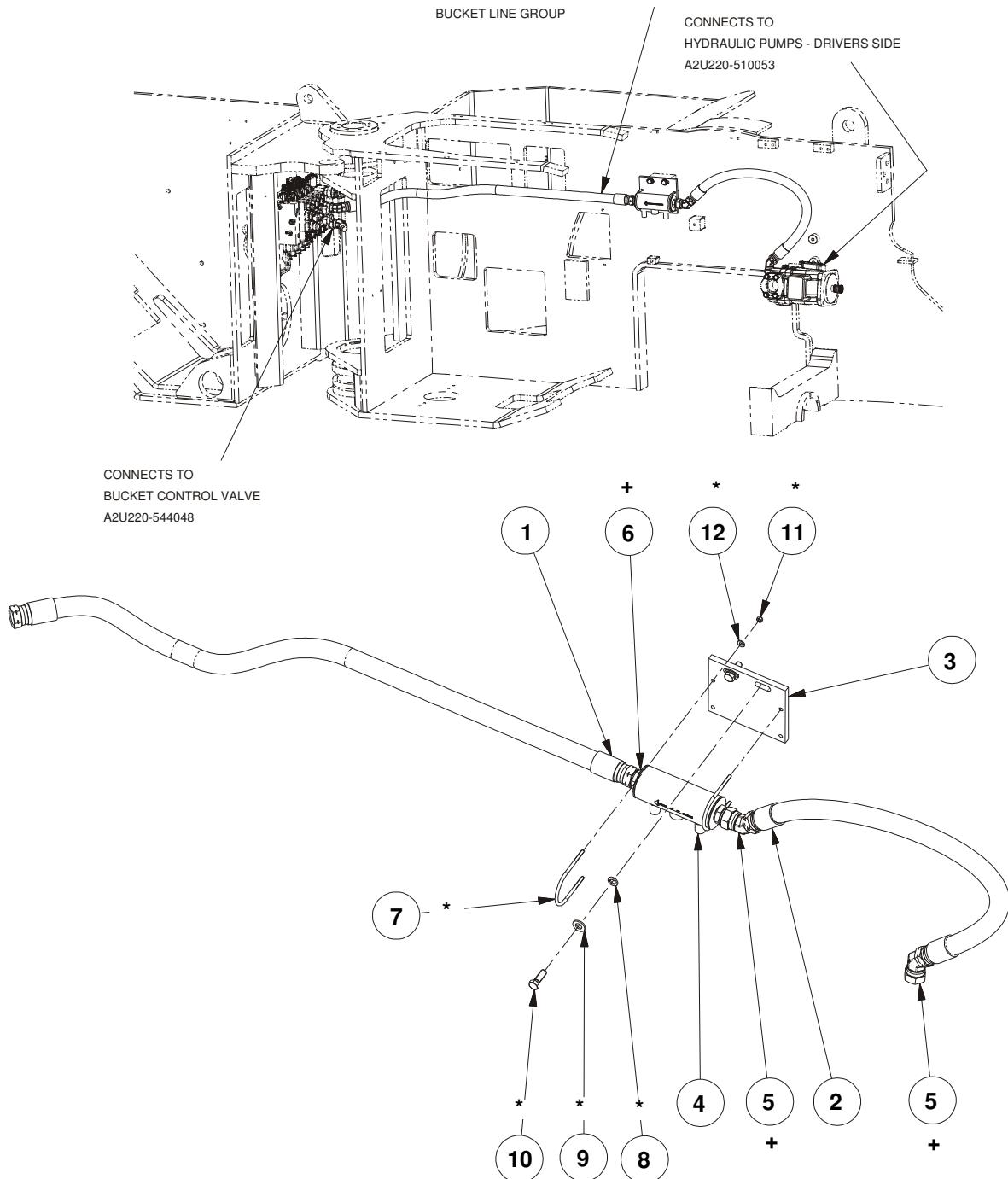
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BD00013618	1	1	Piston, Threaded, HD, 4.0in Bore x 2.5in Rod
2	BD00013621	1	1	Gland, HD, 4.0in x 2.5in
3	BD00013622	1	1	Tube Assembly, QDS Lock
4	BD00013623	1	1	Rod Assembly, QDS Lock
5	BD00013626	1	1	Piston Locking Ring, 2.25in
6	G754	2	1	Plain Spherical Bearing
7	HS506418	2	1	Bearing Ring, Type 506, 2.75in x 0.5in x 0.125in
8	HS506508	2	1	Bearing Ring, Type 506, 4.00in x 0.375in x 0.125in
9	HS621063	1	1	Seal, Rod, Type 621, 2.5in x 3.0in x 0.375in
10	HS735058	1	1	Seal, Piston, DA, Type 735, 4.0in
11	HS842102	1	1	Wiper, Rod, Type 842, 2.5in
12	P1FG	2	1	Grease Nipple, 1/8in NPT
13	SBS342	1	1	O-Ring, ID 3 5/8in x 4in OD x 5.34mm Section
14	SBS342B	1	1	Back-up Washer, O2-342 (H or T)

**BD00008799**

**LINES GROUP, SYSTEM 20 LS190**

**05-35**

**REV. 0**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 05-35**

**Sandvik Underground Mining Flameproof Equipment**

**BD00008799****LINES GROUP, SYSTEM 20 LS190****05-35****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BD00008812	1	1	HOSE KIT, D2900-16-145-21
2	BD00008811	1	1	HOSE KIT-D2900-16-83-21
3	A2U220-591662	1	1	MOUNTING BRACKET
4	A2U130-594170	1	1	VALVE-380L
5	D51-2121	2	2	Adaptor Union 45, 1.5/16" JIC x 1.5/16" JIC M/F
6	D15-1621	2	2	Nipple, 1" NPT x 1.5/16" JIC
7	BD00008762	2	2	U BOLT - 6 DIA
8	450081124	2	2	Washer, Spring, 12 mm
9	450061619	2	2	Washer, Flat, 12 mm
10	445502845	2	2	Bolt Hex Head, M12 x 35mm Long
11	455669026	4	4	Hex Nyloc Nut, M6 X 1
12	450062504	4	4	Washer, Flat, 6 mm
+	BD00008854	1	1	Fitting Kit
*	BD00008855	1	1	Fastener Kit



## PARTS MANUAL

### AIR SYSTEM

06-00

REV.

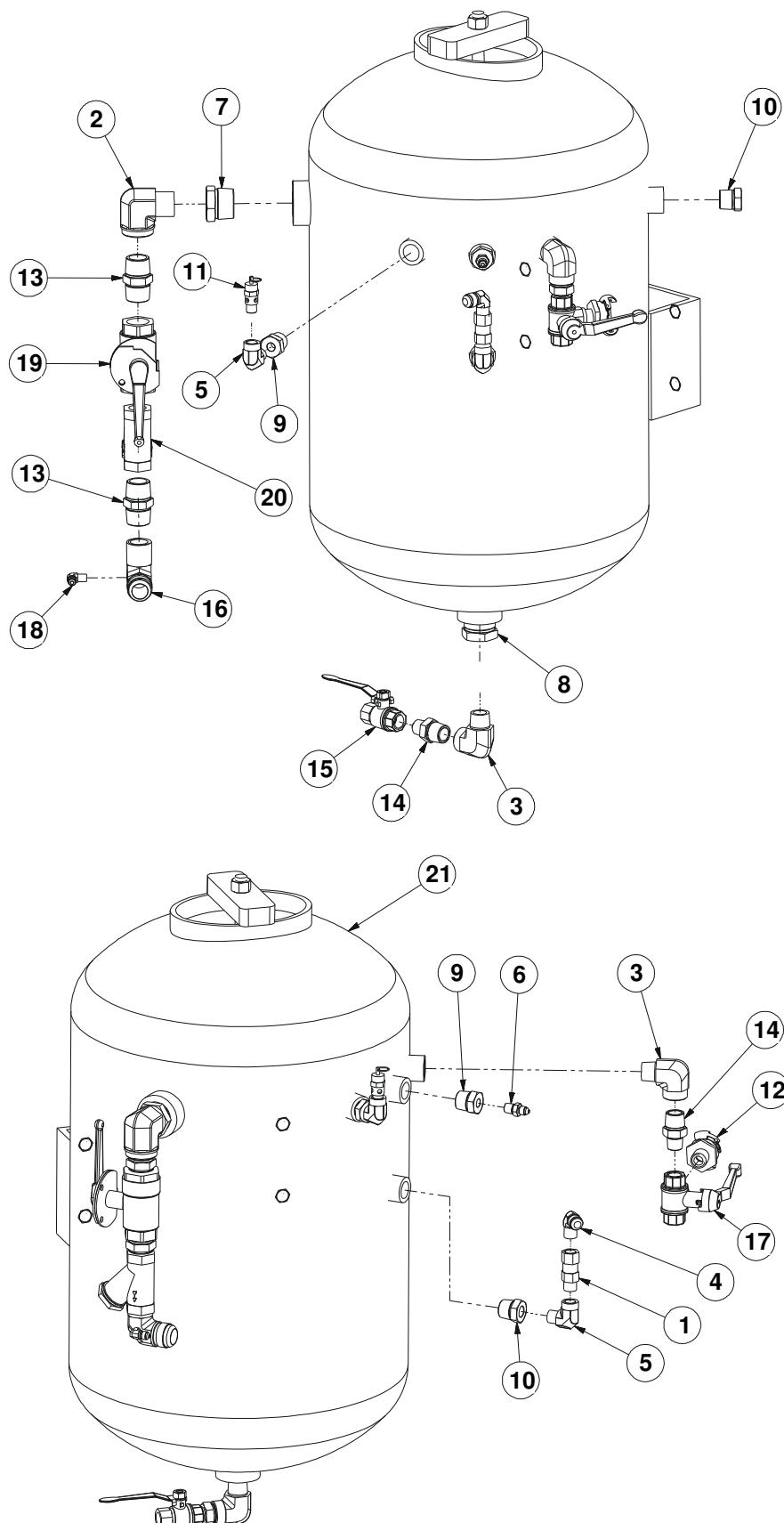
ITEM	PART NO	PAGE	QTY	DESCRIPTION
	A2U220-630003	06-01		AIR RECEIVER GROUP ED10
	A2U220-670033	06-02		AIR STARTER GROUP - CAT 3126TA- 220 LHD
	A2U220-610011	06-03		AIR COMPRESSOR GROUP
	A2U220-601217	06-06		AIR SCHEMATIC

**A2U220-630003**

**AIR RECEIVER GROUP ED10**

**06-01**

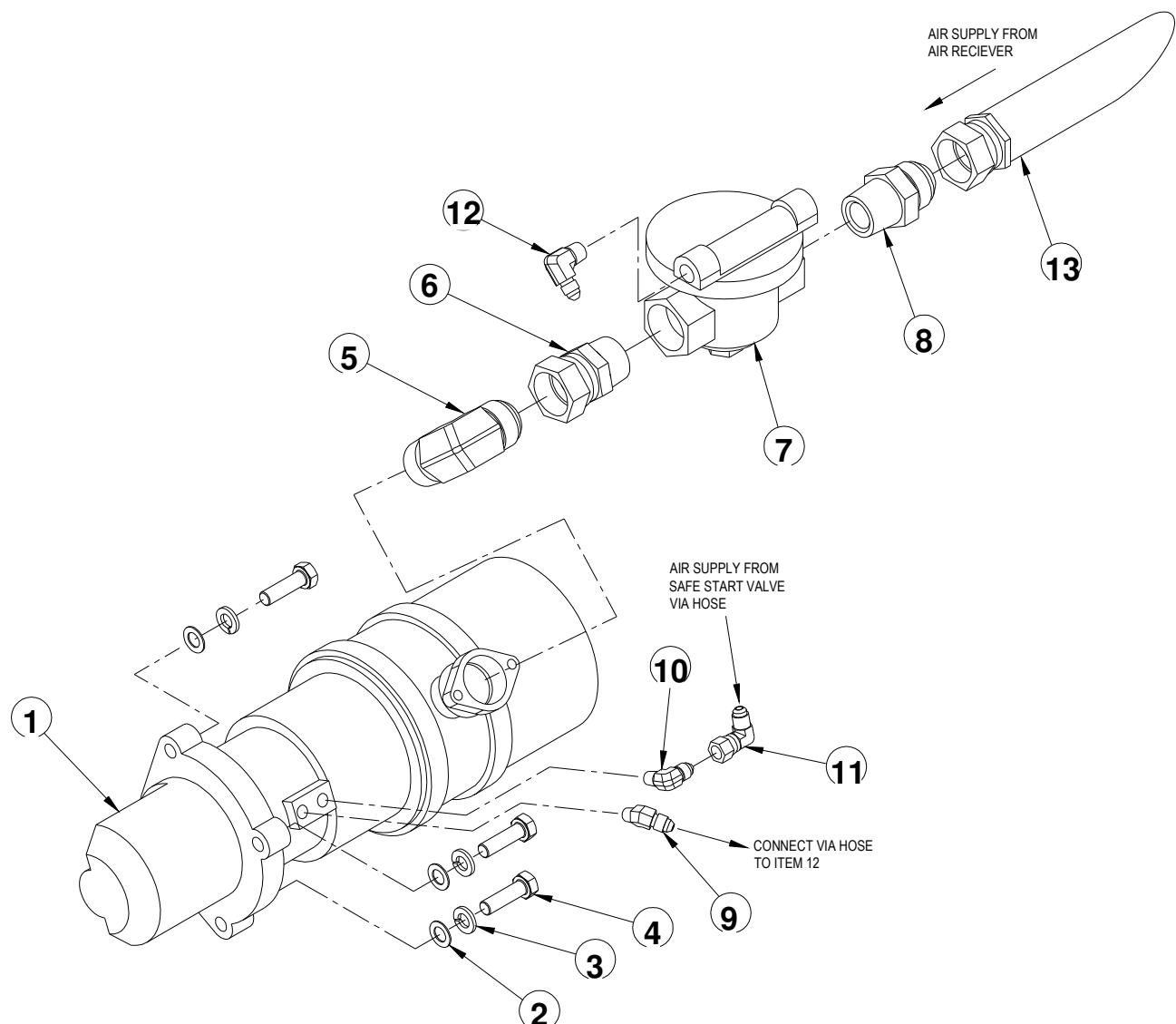
**REV. 1**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**A2U220-630003****AIR RECEIVER GROUP ED10****06-01****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	016-63012	1	1	Check Valve 3/8" Npt M/F
2	D37-1616	1	1	Elbow 90, 1" Npt X 1" Npt M/F
3	D37-1212	2	1	Elbow 90, 3/4" Npt X 3/4" Npt M/F
4	D17-1206	1	1	Elbow 90, 3/4" Npt X 3/8" Jic M/M
5	D37-0606	2	1	Elbow 90, 3/8" Npt X 3/8" Npt M/F
6	D15-0407	1	1	Nipple, 1/4" Npt X 7/16" Jic
7	D21-2016	1	1	Reducing Bush, 1.1/4" Npt X 1" Npt
8	D21-2012	1	1	Reducing Bush, 1.1/4" Npt X 3/4" Npt
9	D21-1204	2	1	Reducing Bush, 3/4" Npt X 1/4" Npt
10	D21-1206	2	1	Reducing Bush, 3/4" Npt X 3/8" Npt
11	A2U900-694062	1	1	Valve, Safety Relief
12	AFP1009-8	1	1	Coupling, Air
13	DA4-1616	2	1	Nipple, 1" Npt X 1" Npt
14	DA4-1208	2	1	Nipple, 3/4" Npt X 1/2" Npt
15	500400	1	1	Ball Valve, Hydraulic Fill Pump
16	A2U913-596083	1	1	D43/1221 - Elbow 90 Deg Npt X Jic
17	A2U936-694048	1	1	Delta - 1/2" 3-Way Ball Valve
18	D17-0207	1	1	Elbow 90, 1/8" Npt X 7/16" Jic M/M
19	A2U900-694095	1	1	Fuel Ball Valve Lockable
20	Y-STRAINER	1	1	Y-Strainer, 1" Npt
21	A2U913-631009	1	1	Air Receiver

**A2U220-670033****AIR STARTER GROUP - CAT 3126TA****06-02****REV. 0**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

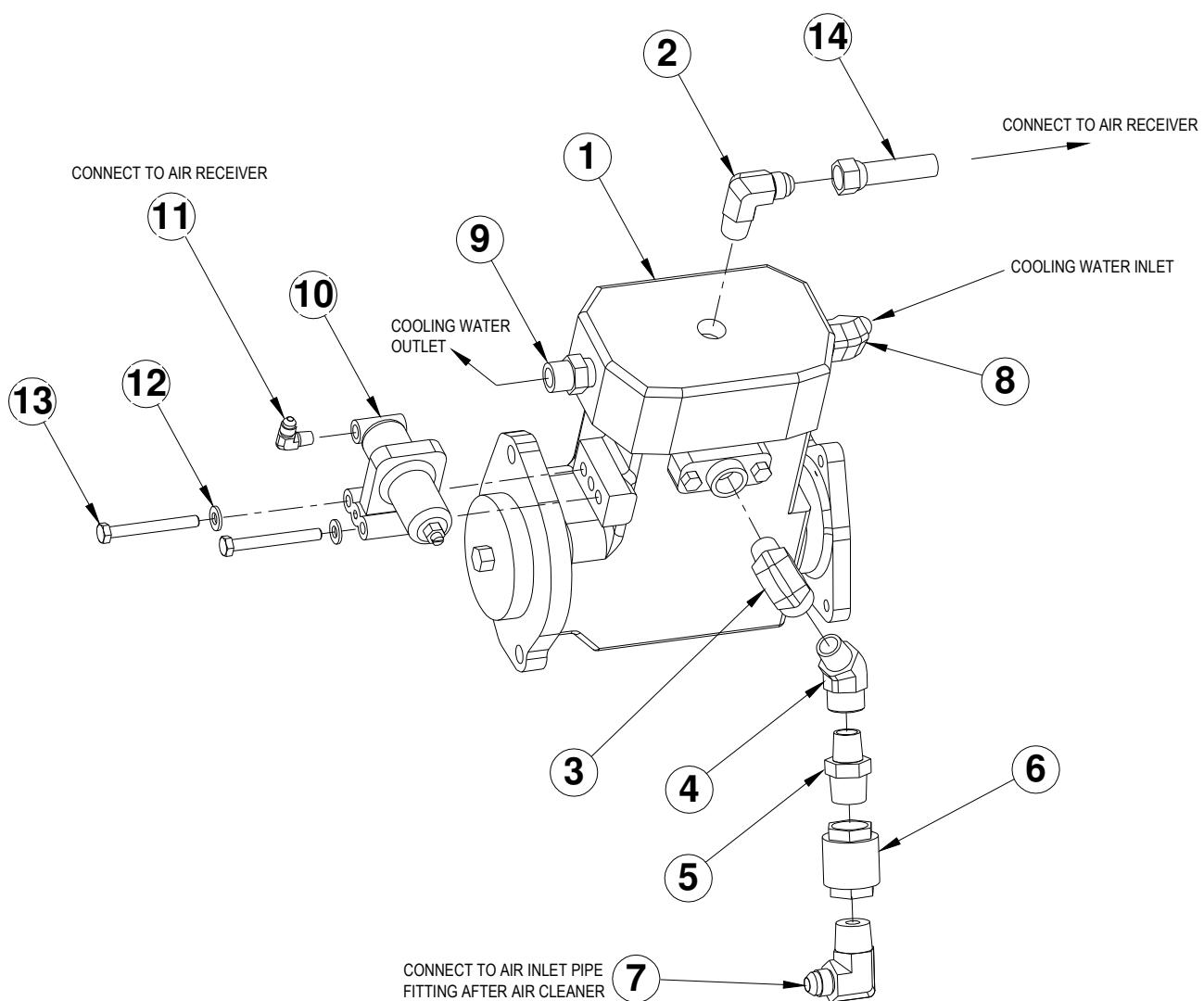
**PARTS MANUAL****A2U220-670033****AIR STARTER GROUP - CAT 3126TA****06-02****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-671012		REF	AIR STARTER
2			3	WASHER M10 x FLAT
3	450081022		3	WASHER, SPRING M10
4			3	BOLT, HEX HD M10 x 35
5	D17-1621		1	ELBOW 90 DEG NPT TO JIC
6	D25-1621		1	ADAPTOR NPT - JIC, M/F
7	A2U921-694008		REF	VALVE, AIR RELAY
8	D15 1621		1	NIPPLE NPT x JIC
9	D41-27		1	ELBOW 45 DEG NPT TO JIC
10	D17-27		1	ELBOW 90 DEG NPT TP JIC
11	D50-77		1	ELBOW 90 DEG., SWIVEL
12	D17-47		1	ELBOW 90 DEG NPT TO JIC
13	D2900-16-80-21		1	HOSE ASSEMBLY

**A2U220-610011**  
**REV. 1**

**AIR COMPRESSOR GROUP - CAT  
3126TA**

**06-03**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 06-03**

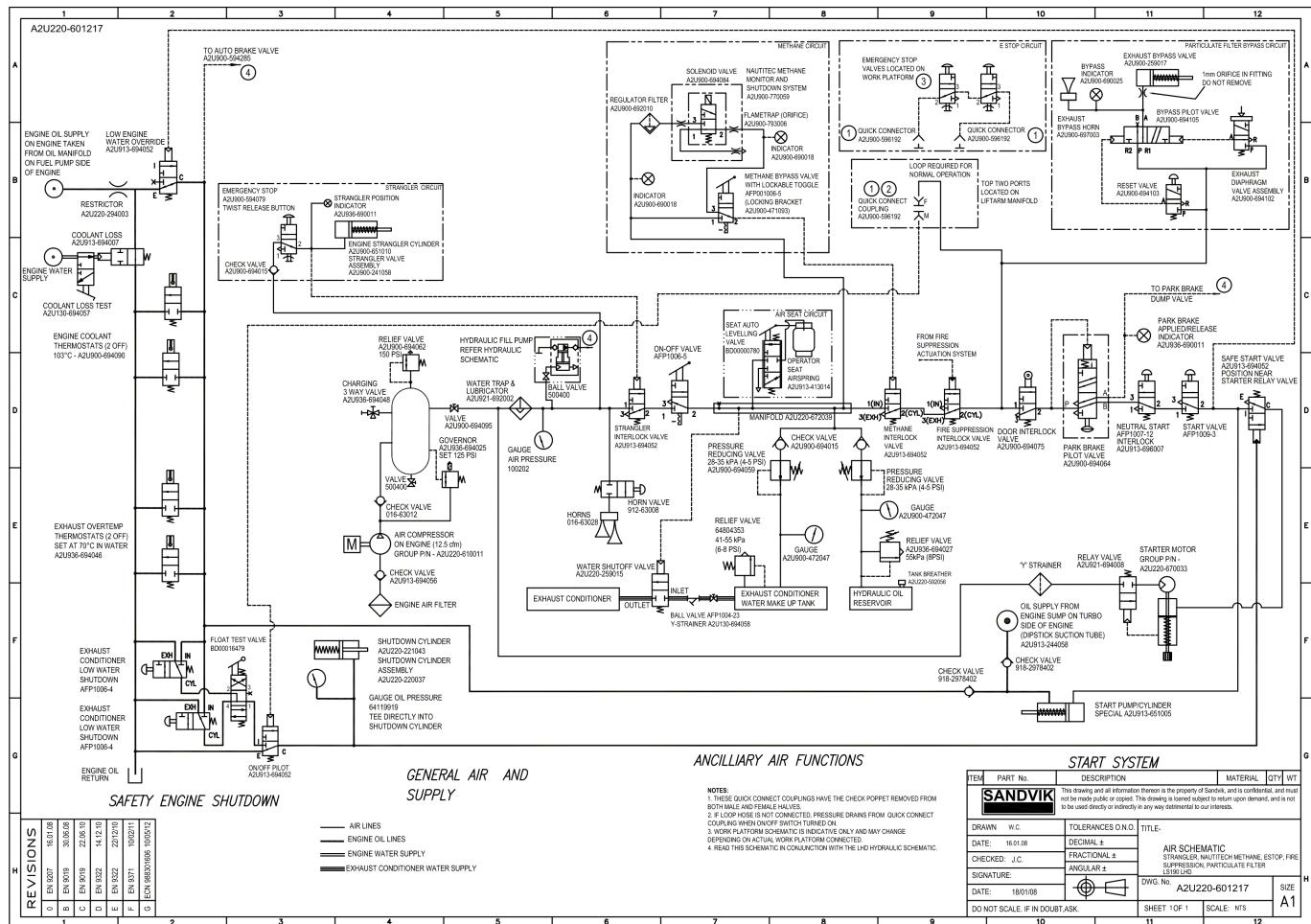
Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****AIR COMPRESSOR GROUP - CAT  
3126TA**

06-03

**A2U220-610011****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	C2A9Y9943			REF COMPRESSOR
2	D17-812		1	ELBOW 90 DEG NPT - JIC
3	D37-0808		1	ELBOW 90 DEG NPT - NPT, M/F
4	D39-0808		1	ELBOW 45 DEG NPT - NPT, M/F
5	D4-1208		1	NIPPLE REDUCER NPT - NPT, M/M
6	A2U913-694056			REF CHECK VALVE
7	D17-1212		1	ELBOW 90 DEG NPT - JIC
8	C2A0321339			REF ELBOW 45 DEG
9	C2A8C6872			REF CONNECTOR
10	A2U936-694025			REF VALVE, GOVERNOR
11	D17-27		1	ELBOW 90 DEG NPT - JIC
12	64404396		2	WASHER, SPRING M12 M12
13	445402772		2	BOLT, HEX HD M8 X 70 M8 x 70 LG
14	D505-8-190-12			REF HOSE ASSEMBLY

**A2U220-601217  
REV. 6**
**AIR SCHEMATIC**
**06-06**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 06-06**
**Sandvik Underground Mining Flameproof Equipment**

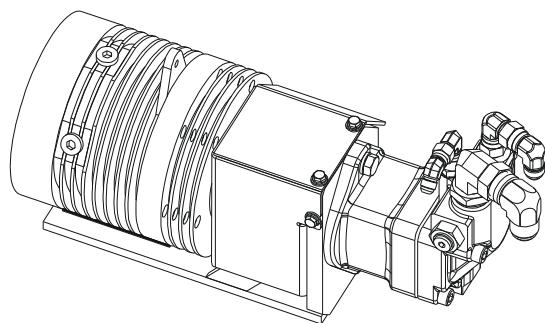
**ELECTRICAL & INSTRUMENTS****07-00****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	A2U220-710062	07-01		ALTERNATOR & DRIVE GRP MINING REPAIR
	A2U220-470061	07-02		DASH PANEL GROUP - COLOUR CODED GAUGES
	A2U900-775042	07-05		METHANE SYSTEM LS170/LS190/TS490
	A2U220-720030	07-06		HEADLIGHT & MOUNTING GROUP LS190
	A2U220-701209	07-09		ELECTRICAL SCHEMATIC LS170/190 + CH4
	BD00008866	07-19		HYTR. HRMETER MOUNTING GRP.

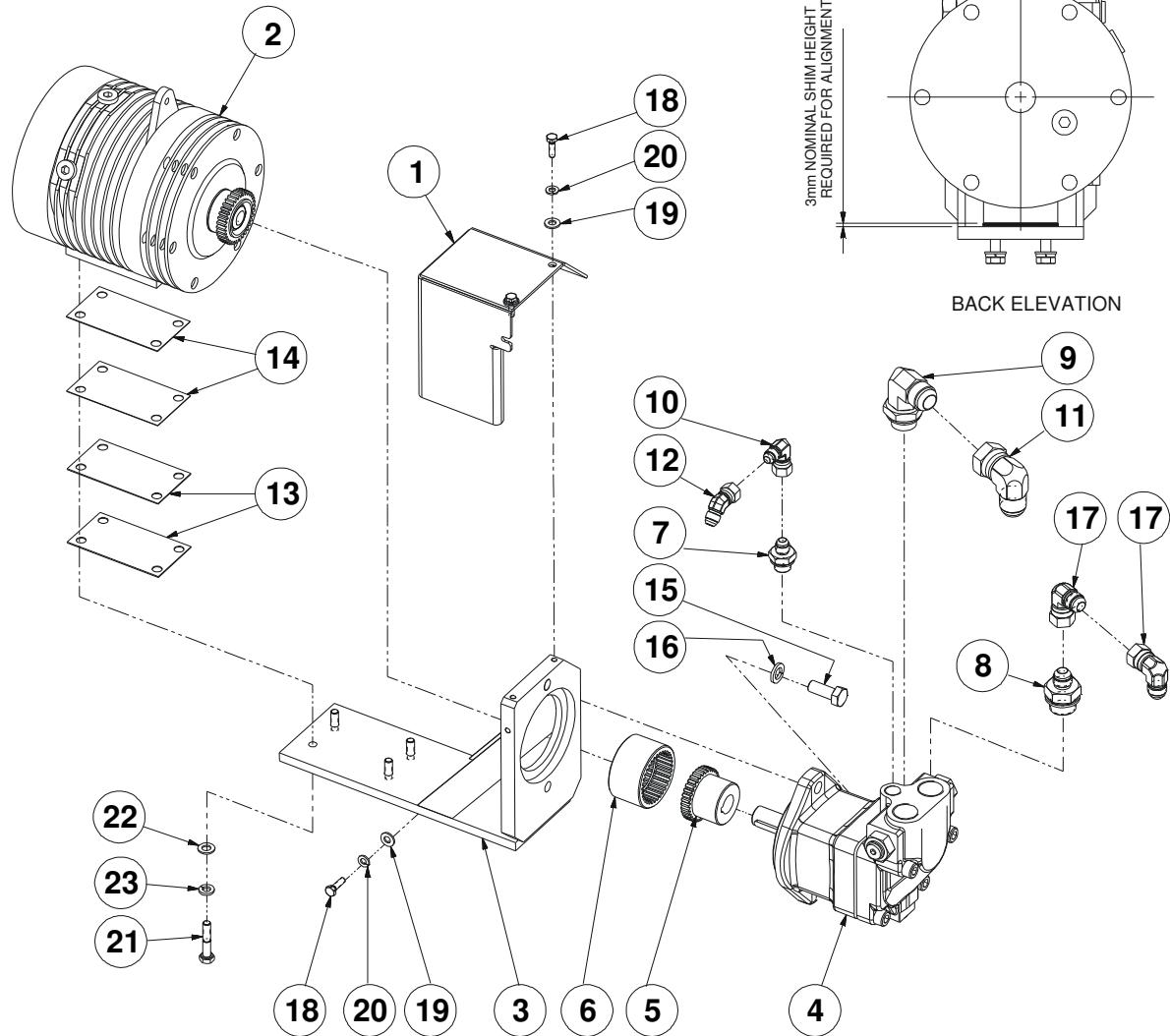
**A2U220-710062**  
**REV. 0**

**ALTERNATOR & DRIVE GRP MINING  
REPAIR**

**07-01**



ASSEMBLED VIEW



TOTAL ESTIMATED MASS = 45.5 kg

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 07-01**

Sandvik Underground Mining Flameproof Equipment

**ALTERNATOR & DRIVE GRP MINING  
REPAIR**

07-01

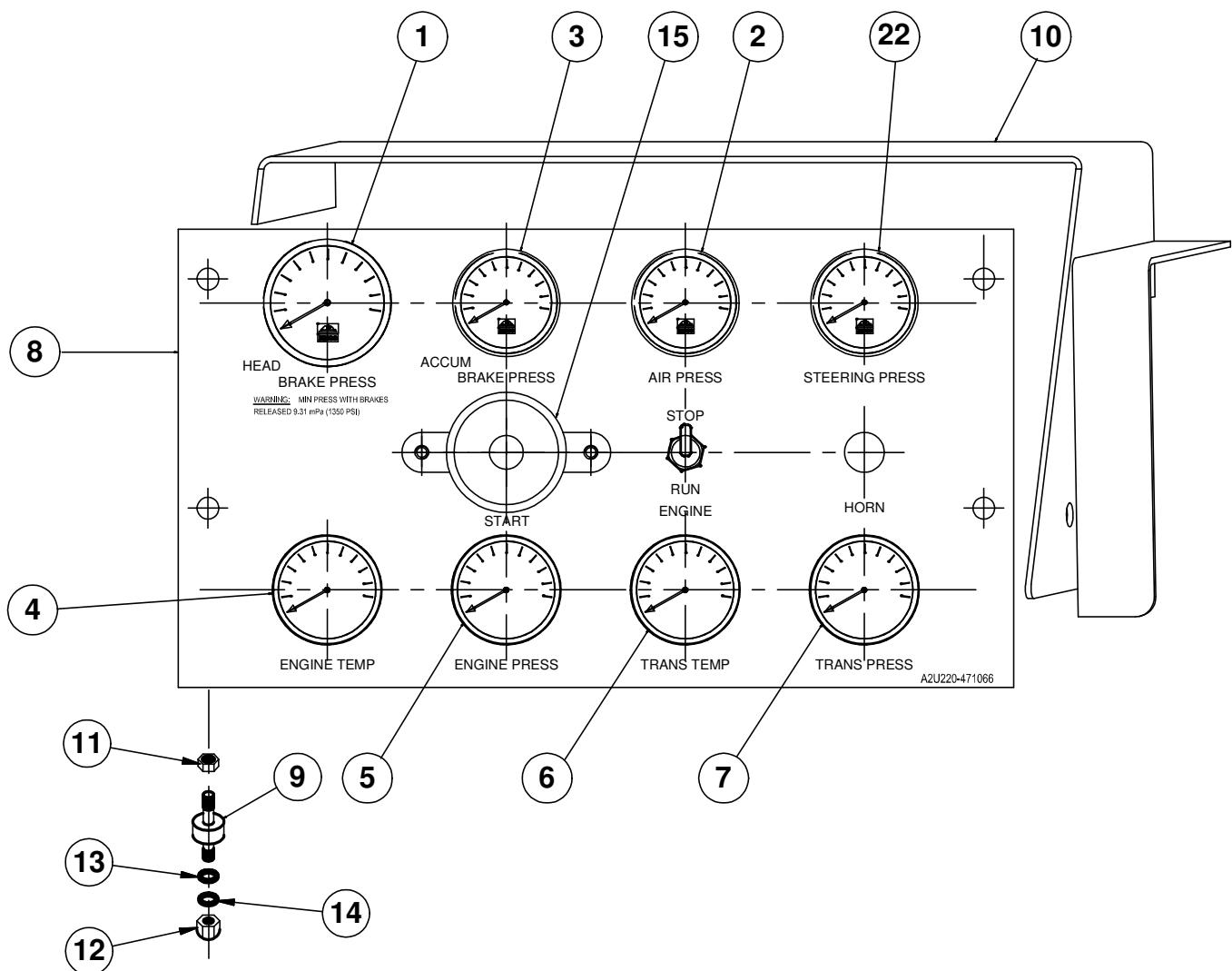
**A2U220-710062****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U220-710063	1	1	Cover, Alternator
2	A2U900-711010	1	1	Electronic Alternator Mining Repair
3	A2U220-710047	1	1	Alternator Support Frame
4	A2U900-521050	1	1	Motor Bend Axis Piston
5	A2U900-522037	1	1	Steel Coupling
6	A2U913-522006	1	1	Coupling, Centre
7	D256-0609	1	1	Nipple, 3/8" Bspp O-Ring X 9/16" Jic
8	D256-1212	1	1	Nipple, 3/4" Bspp O-Ring X 3/4" Jic
9	D257-1217	1	1	Elbow 90, 3/4" Bspp X 1.1/16" Jic M/M
10	D50-0909	1	1	Adaptor Union 90, 9/16" Jic X 9/16" Jic M/F
11	D50-1717	1	1	Adaptor Union 90, 1.1/16" Jic X 1.1/16" Jic M/F
12	D51-0909	1	1	Adaptor Union 45, 9/16" Jic X 9/16" Jic M/F
13	A2U220-1911334	2	1	Shim - Alternator - 0.9Mm
14	A2U220-1911335	2	1	Shim - Alternator - 0.55 Mm
15	445502843	2	1	Bolt Hex Head, M12 X 30Mm Long
16	450081124	2	1	Washer, Spring, 12 Mm
17	D50-1212	2	1	Adaptor Union 90, 3/4" Jic X 3/4" Jic M/F
18	445502660	3	1	Bolt Hex Head, M6 X 20Mm Long
19	450062504	3	1	Washer, Flat, 6 Mm
20	450081116	3	1	Washer, Spring, 6 Mm
21	445502766	4	1	Bolt Hex Head, M8 X 40Mm Long
22	450062506	4	1	Washer, Flat, 8 Mm
23	450081120	4	1	Washer, Spring, 8 Mm

**A2U220-470061**  
**REV. 0**

**DASH PANEL GROUP - COLOUR  
CODED GAUGES**

**07-02**

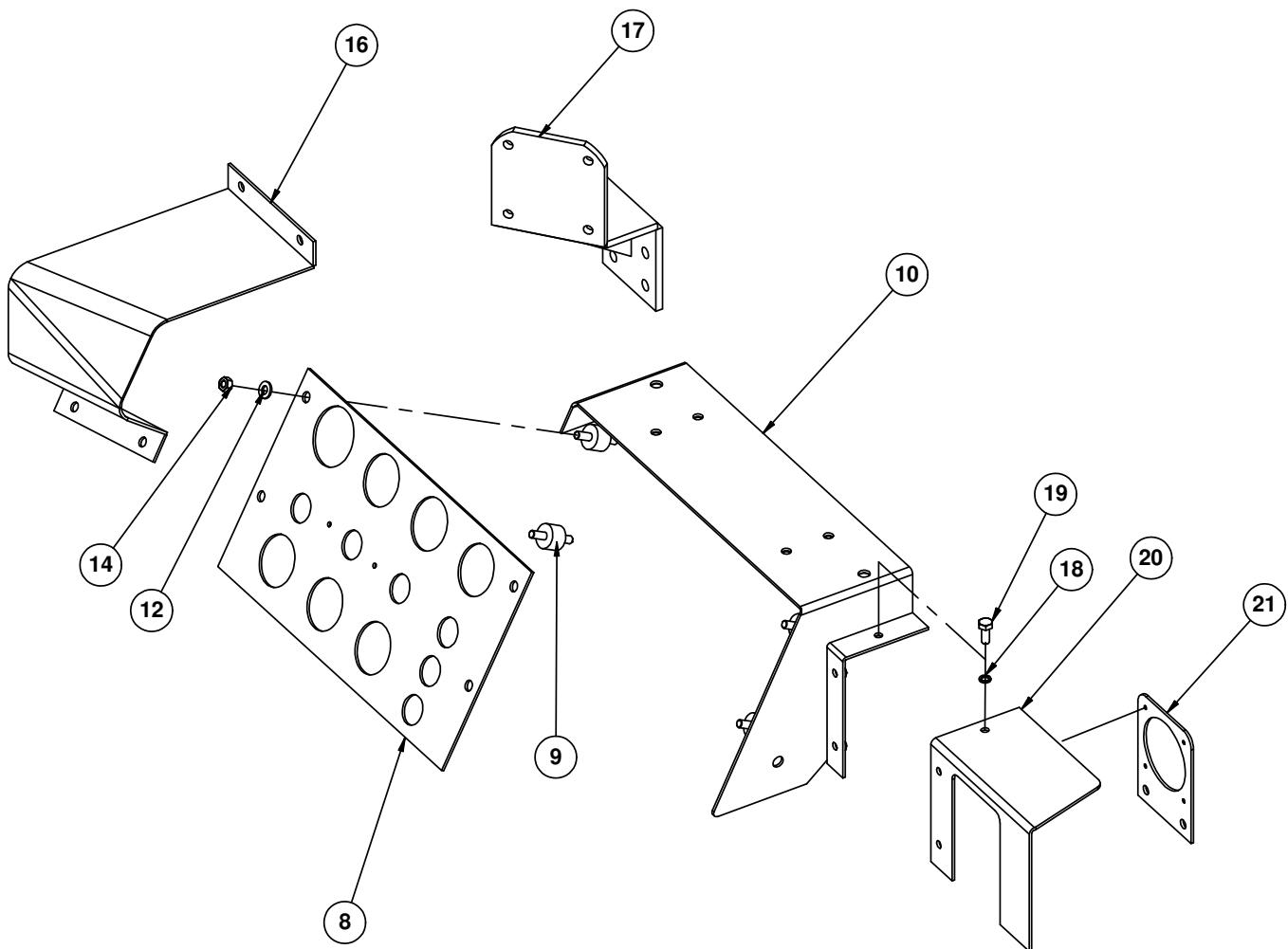


PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**A2U220-470061**  
**REV. 0**

**DASH PANEL GROUP - COLOUR  
CODED GAUGES**

**07-02**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 07-02**

**Sandvik Underground Mining Flameproof Equipment**

**DASH PANEL GROUP - COLOUR  
CODED GAUGES**

07-02

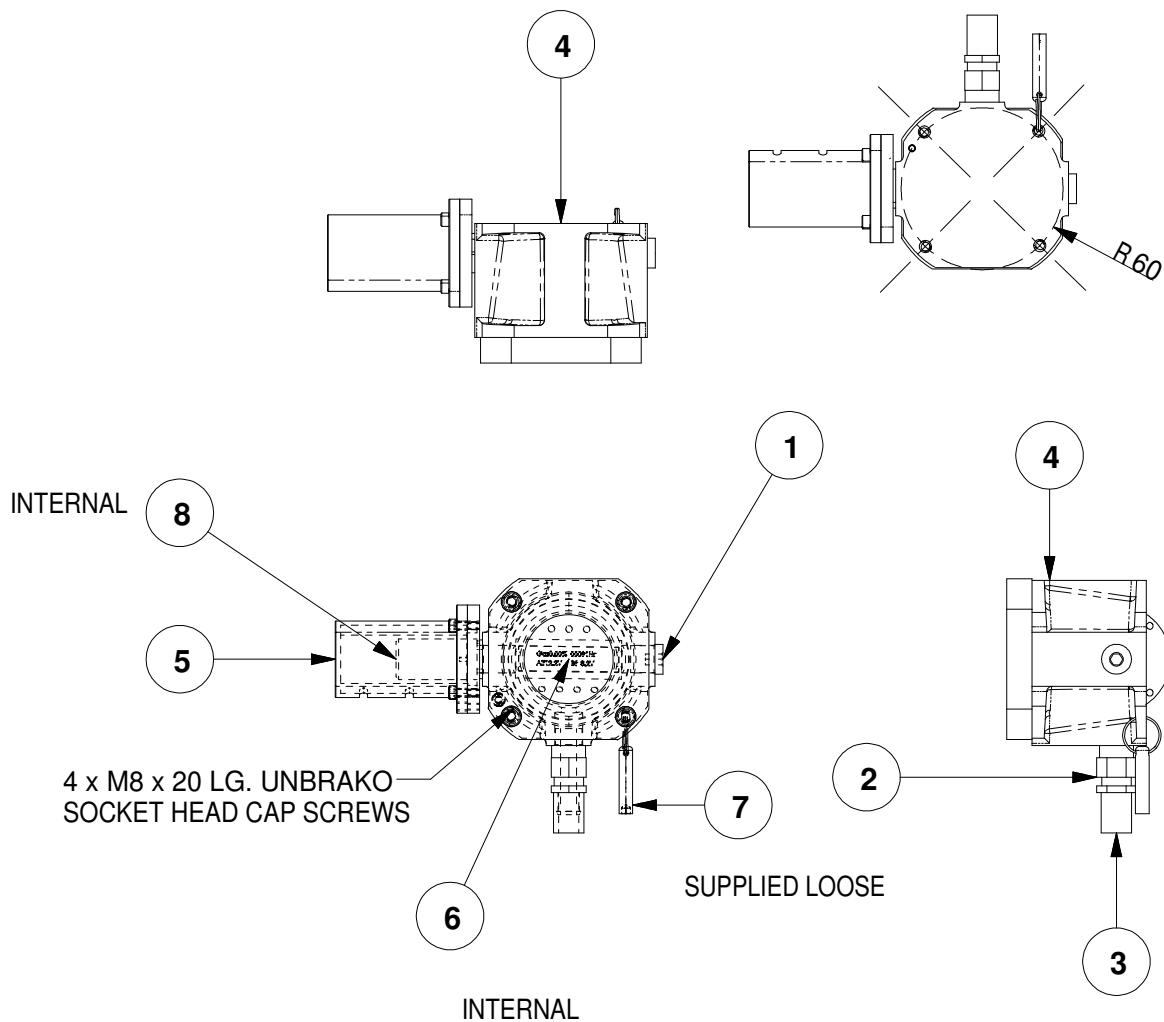
**A2U220-470061****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-472060		1	HEAD BRAKE PRESS, GAUGE
2	A2U900-472059		1	AIR PRESSURE GAUGE
3	A2U900-472061		1	GAUGE, HYDRAULIC
4	A2U900-472055		1	ENGINE TEMPERATURE GAUGE
5	A2U900-472057		1	ENGINE PRESSURE GAUGE
6	A2U900-472056		1	TRANSMISSION TEMPERATURE GAUGE
7	A2U900-472058		1	TRANSMISSION PRESSURE GAUGE
8	A2U220-471079	4		DASH PANEL
9	919-620002		1	VIBRO - INSULATOR
10	A2U220-491247		1	COVER
11	T5GG	4		NUT
12	T5YN	4		NUT, DOME
13	W5GA	8		WASHER, FLAT
14	W5GF	8		WASHER, SPRING
15	A2U130-490042	1		GUARD, START BUTTON
16	A2U220-491244	1		COVER PANEL
17	A2U220-491246	1		MOUNTING BRACKET
18		4		BOLT, HEX HD, S.S. M8 x 20 LG
19		4		WASHER, SPRING, S.S. M8
20	A2U220-491243	1		COVER
21	A2U220-491245	1		BRACKET, PTO WINCH
22	A2U900-472062	1		STEERING ACC. PRESSURE GAUGE

**A2U900-775042**  
**REV. 0**

**METHANE SYSTEM LS170/ LS190/  
TS490**

**07-05**



**NOTE:**  
COMPLETE CH4 MONITOR  
SYSTEM INCLUDES FLP  
ENCLOSURE

**ITEM:** CH4 METHANE SYSTEM FOR LS170, LS190 AND TS490

**CERTIFICATION:** IS Ex d  
ITEM 4: IEC Ex SIM 05.0007X  
ITEM 5: AUSEx 3741X

**NOTES:**

1. INCLUDES EARTH LEAKAGE TEST FUNCTIONALITY TO SUIT 12V/500W ALTERNATOR
2. ENSURE DISPLAY PCB IS SUPPLIED WITH LATEST SOFTWARE REVISION AT TIME OF ORDER (AT LEAST REV. 1.15)
3. ENSURE THAT DEVICE IS MARKED CLEARLY WITH SOFTWARE REVISION THAT IS INSTALLED
4. MUST COME WITH ROUTINE PRSSURE TEST CERTIFICATE TRIP MUST BE SET TO GREATER THAN 500mA
5. MUST BE CLEARLY MARKED WITH DATE OF CALIBRATION AND ASSOCIATED CERTIFICATES
6. MUST BE SUPPLIED WITH NATA CERTIFICATE FOR CH4 IR SENSOR

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**



## PARTS MANUAL

### METHANE SYSTEM LS170/ LS190/ TS490

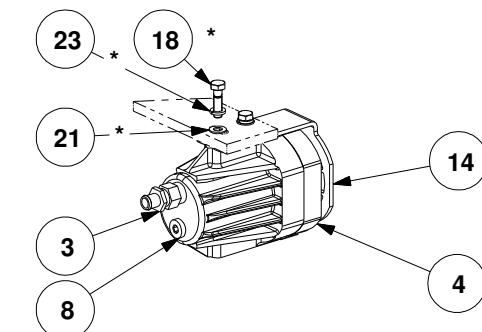
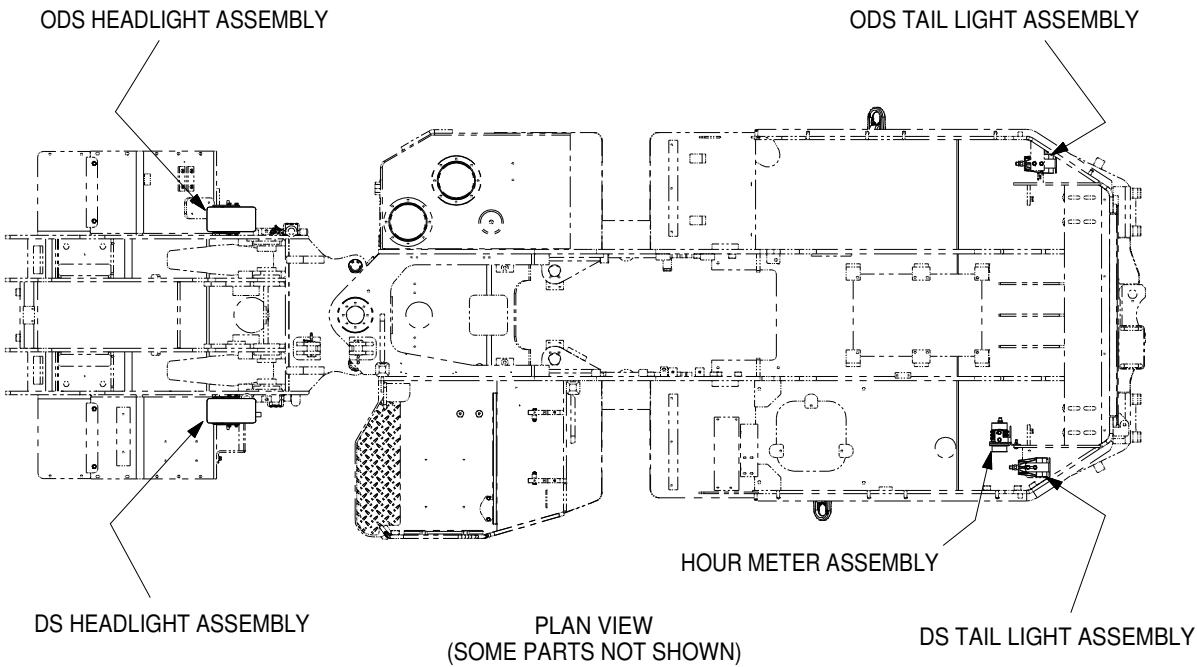
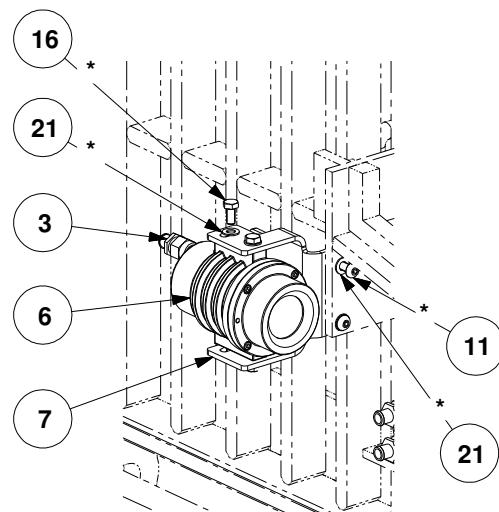
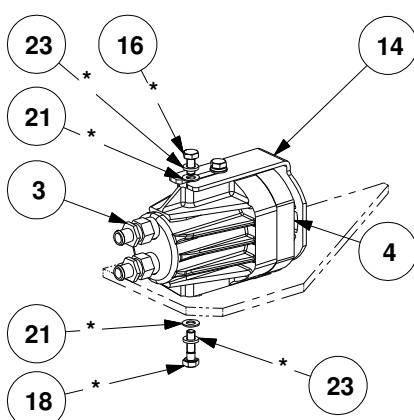
07-05

A2U900-775042

REV. 0

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	N.S.S.		1	BLANKING PLUG, M20, FLP
2	N.S.S.		1	HOSE GLAND, M20, FLP, (GWPME1A)
3	N.S.S.		1	Cable, 12 Core - 7m Lg.
4	N.S.S.		1	NTMS C7 CH4 Remote Display Assy (FLP Enclosure Only)
5	N.S.S.		1	NTMS C7 CH4 IR Sensor Assy
6	N.S.S.		1	CH4 DISPLAY PCB (LS170/LS190/TS490)
7	BD00013613		1	NTMS C7 CH4 Magnetic Pencil
8	N.S.S.		1	NTMS C7 CH4 Soft Filter Kit

\*\*\* N.S.S. = NOT SOLD SEPARATELY \*\*\*

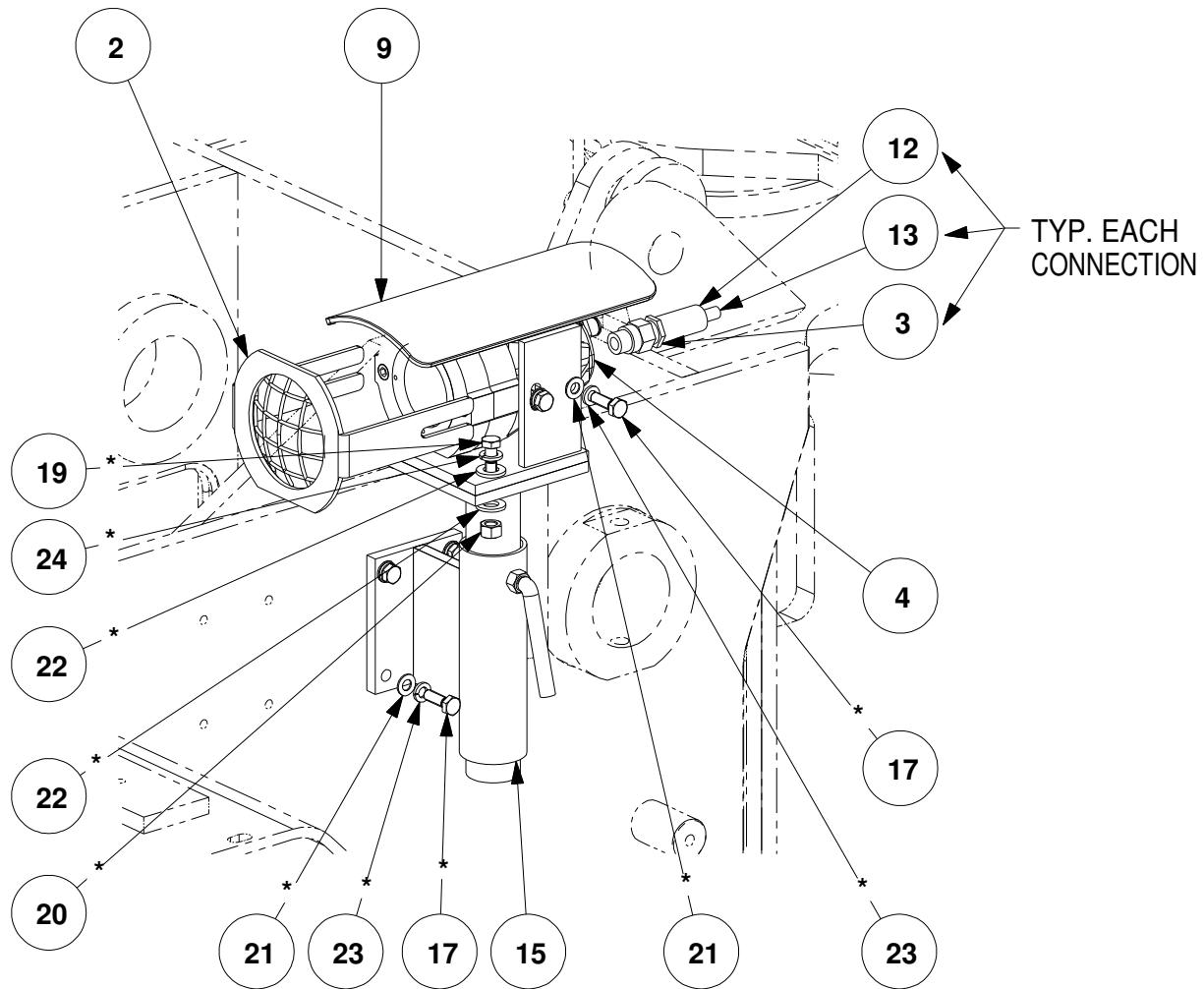
**A2U220-720030**
**HEADLIGHT GROUP LS190**
**07-06**
**REV. 1**

**DETAIL VIEW  
ODS TAIL LIGHT ASSEMBLY**

**DETAIL VIEW  
HOUR METER ASSEMBLY**

**DETAIL VIEW  
DS TAIL LIGHT ASSEMBLY**
**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 07-06**
**Sandvik Underground Mining Flameproof Equipment**

A2U220-720030

**HEADLIGHT GROUP LS190**

07-06

REV. 1



DETAIL VIEW  
DS HEADLIGHT ASSEMBLY

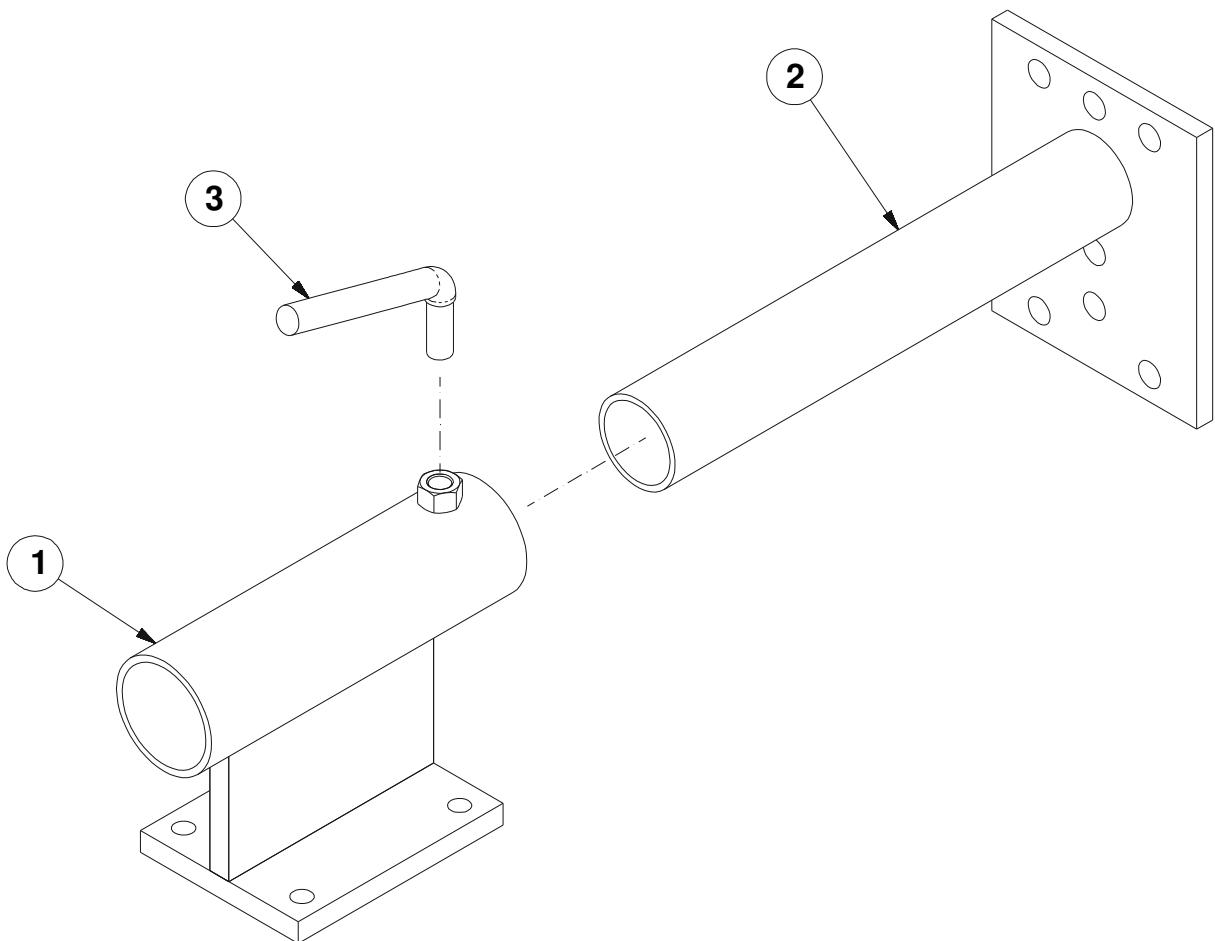
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 07-06**

Sandvik Underground Mining Flameproof Equipment

**A2U220-720030****HEADLIGHT GROUP LS190****07-06****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
*	BD00027199		1	FASTENER KIT
2	A2U900-721021		2	HEADLIGHT GUARD
3	AFP1008-40		9	HOSE GLAND, M20, FLP
4	A2U921-792030		4	LIGHT HOUSING
5	BD00007523		1	HOURMETER FAULT INJECTOR
6	BD00001628		1	LS312-1-12 FLAME PROOF MINI LIGHT
7	BD00009679		1	FAULT INJECTOR MOUNT WELDMENT.
8	A2U900-734024		1	BLANKING PLUG, M20, FLP
9	A2U921-792032		2	BRACKET - LIGHT PROTECTOR
10	455309034*		2	Hex Nut, M10 X 1.5
11	BD00009682*		2	Button Head Screw, M10 x 45
12	D817		1	CABLE PROTECTION HOSE ID16 OD24
13	A2U900-731058		1	Cable Type 1, 4 cores 2.5 sq mm
14	BD00027101		2	LIGHT GUARD
15	A2U900-191723	07-06-05	2	MOUNT POST ASSY
16	445502799*		6	Bolt Hex Head, M10 x 20mm
17	445502802*		16	Bolt Hex Head, M10 x 30mm
18	445512804*		4	Bolt Hex Head, M10 x 35mm
19	445502806*		4	Bolt Hex Head, M10 x 40mm
20	455309036*		6	Hex Nut, M12 X 1.75
21	450062508*		28	Washer, Flat, 10 mm
22	450061619*		8	Washer, Flat, 12 mm
23	450081022*		22	Washer, Spring, 10 mm
24	450081124*		4	Washer, Spring, 12 mm

**A2U900-191723****HEADLIGHT MOUNTING BRACKET****07-06-05****REV. 4****PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION 07-06-05**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

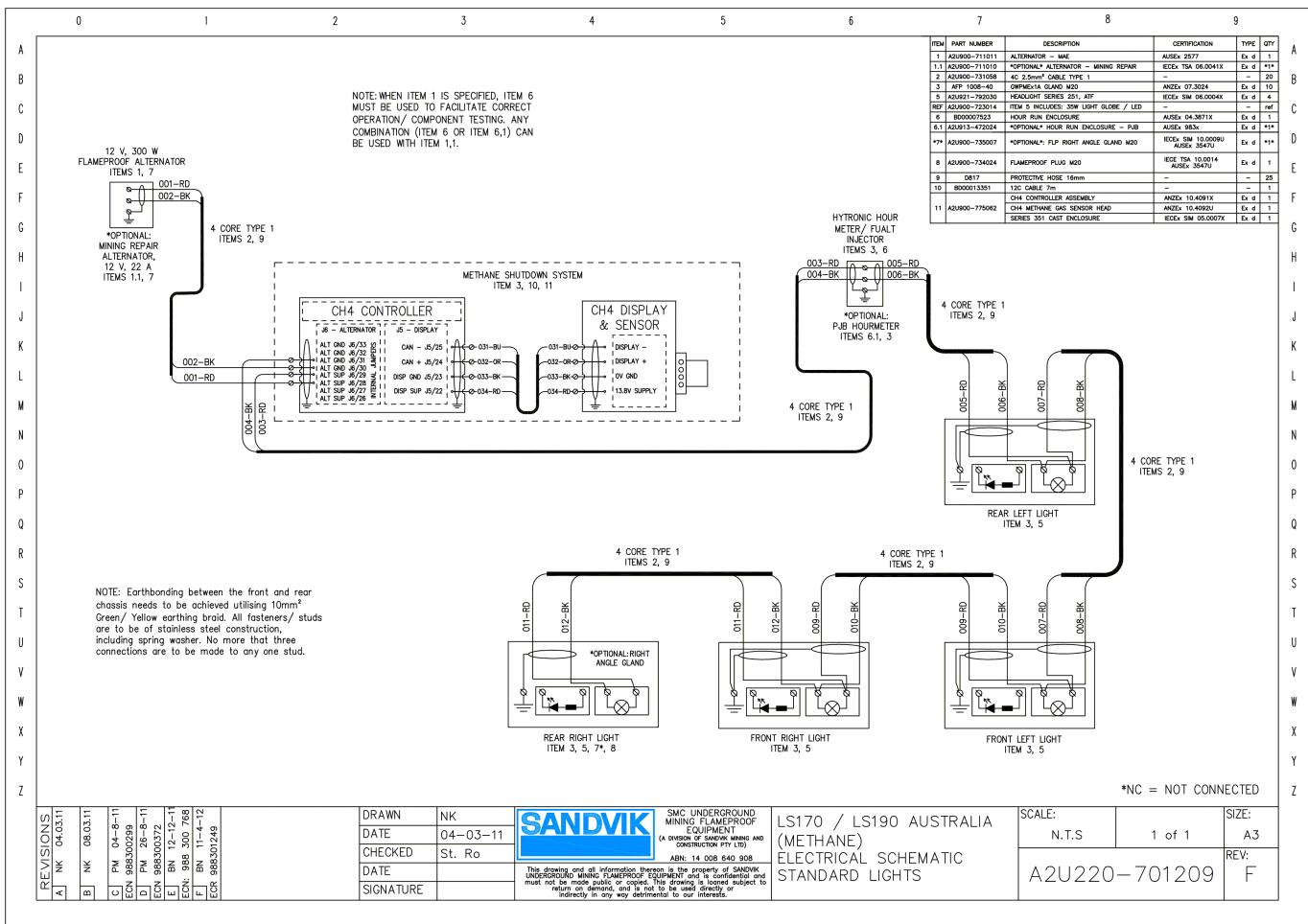
A2U900-191723

HEADLIGHT MOUNTING BRACKET

07-06-05

REV. 4

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-1911314	1	1	Post Bracket
2	A2U900-1911315	1	1	Mount Post
3	A2U900-192101	1	1	Lock Handle

**ELECTRICAL SCHEMATIC LS170/190  
+ CH4**
**07-09**
**A2U220-701209**
**REV. 5**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**
**SECTION 07-09**
**Sandvik Underground Mining Flameproof Equipment**

**ELECTRICAL SCHEMATIC LS170/190  
+ CH4**

07-09

**A2U220-701209****REV. 5**

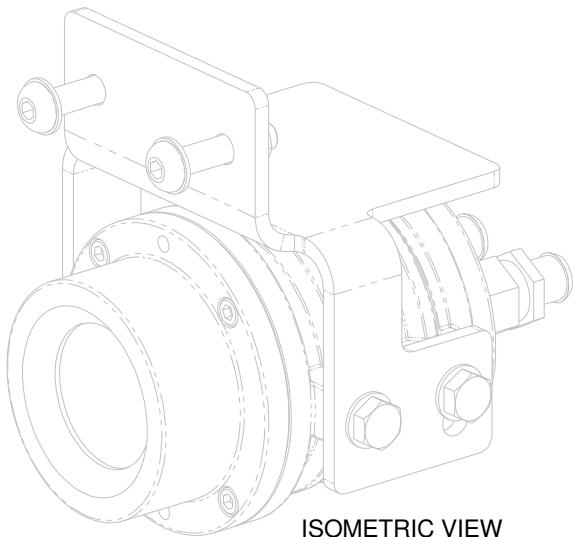
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-711011		1	Alternator, MAE Elec.
*	A2U900-711010	REF		Alternator, Mining Repair * OPTIONAL*
2	A2U900-731058	20		4C x 2.5mm Cable Type 1
3	AFP1008-40	10		FLP Glands
*	A2U900-723014	4		35W Light Globe * ITEM 5 INCLUDES THIS*
5	A2U921-792030	REF		Headlight Series 251
6	BD00007523	1		Hour Run Enclosure
*	A2U913-472024			Optional Hour Run Enclosure - PJB
7	A2U900-735007	1		Right Angle Gland
8	A2U900-734024	1		Blanking Plug 20mm
9	D817	25		Protective Hose
10	BD00013351	1		12C Cable x 7m
11	A2U900-775062	1		CH4 Methane Gas Sensor Head Series 351 Cast Enclosure

BD00008866

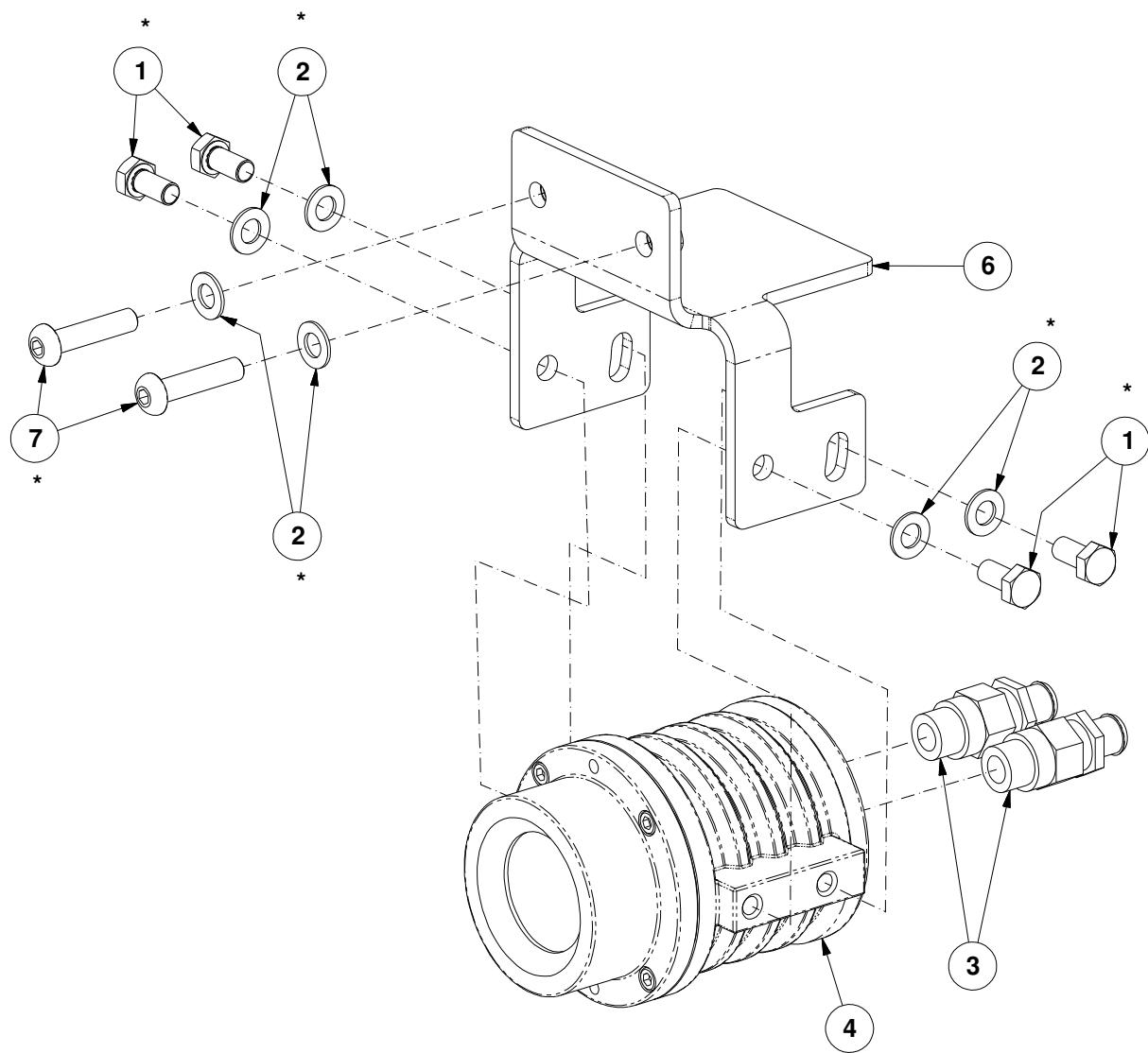
**HYTR. HRMETER MOUNTING GRP.**

07-19

REV. 0



ISOMETRIC VIEW



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**BD00008866****HYTR. HRMETER MOUNTING GRP.****07-19****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445502799*	4		Bolt Hex Head, M10 x 20mm Long
2	450062508*	6		Washer, Flat, 10 mm
3	AFP1008-40	2		GLAND GWPM 1A EX
4	BD00007523	1		Hourmeter/Fault Injector
*	BD00008964	1		Fastener Kit
6	BD00009679	1		Fault Injector Mount Weldment
7	BD00009682*	2		Button Head Machine Screw, M10 x 45 Lg.



## PARTS MANUAL

### ATTACHMENTS & ACCESSORIES

08-00

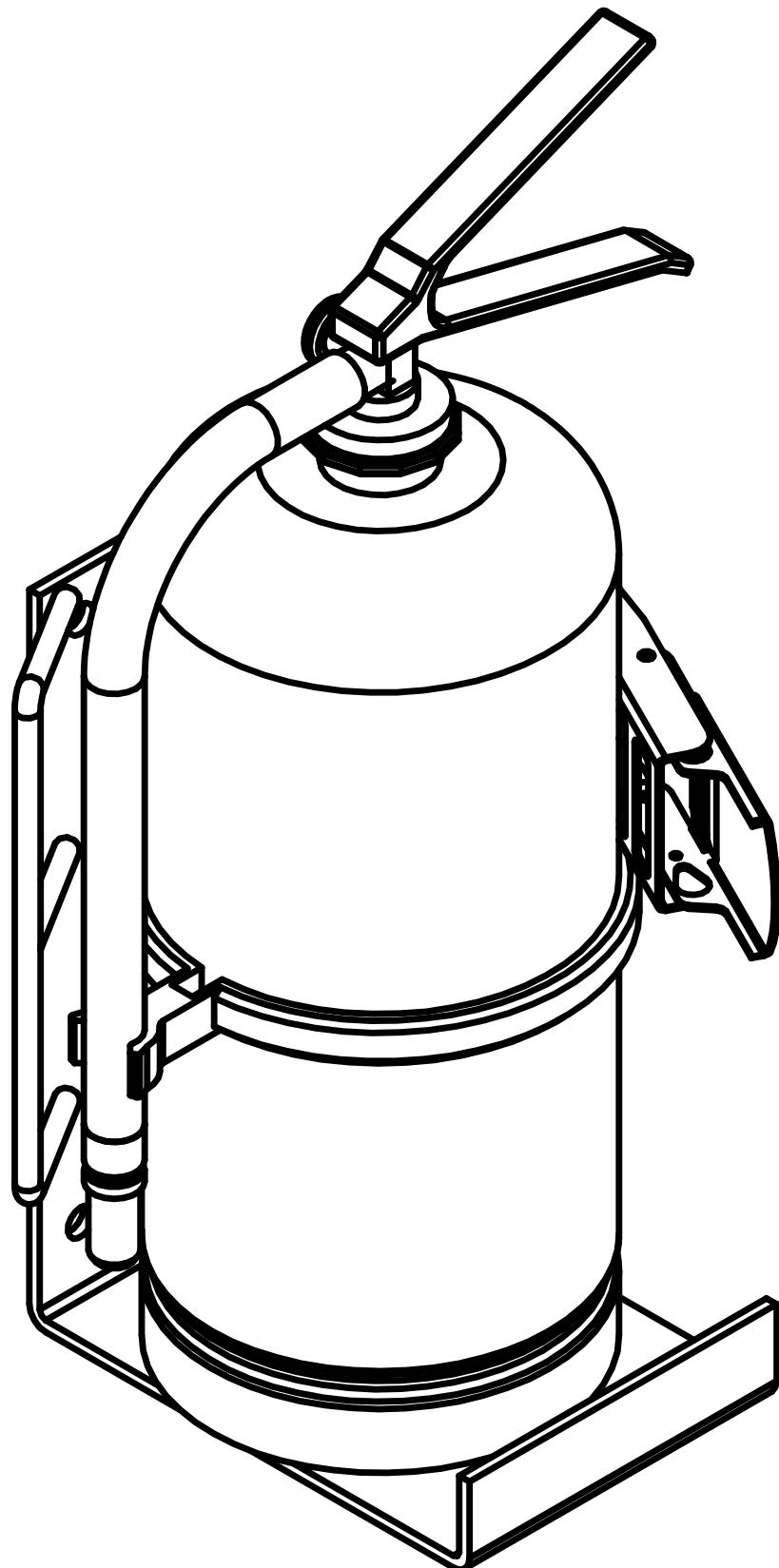
REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
	A2U900-486015	08-02		FIRE EXTINGUISHER GROUP, QUELL 4.5 KG
	A2U900-190062	08-03		TOWING GROUP, TRAILER
	A2U130-190139	08-03		TOWING GROUP
	A2U220-100039	08-04		TOW HITCH GROUP
	A2U913-160122	08-07		QDS ATTACHMENT, 4 CU YD BUCKET GROUP
	BD00024984	08-15		HYDEN AUTO LUBE LS190/ 191
	NFP1000	08-24		SANDVIK NFP1000 FIRE SUPPRESSION

A2U900-486015  
REV. 1

**FIRE EXTINGUISHER GROUP,  
QUELL 4.5 KG**

**08-02**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**



## PARTS MANUAL

### FIRE EXTINGUISHER GROUP, QUELL 4.5 KG

08-02

A2U900-486015

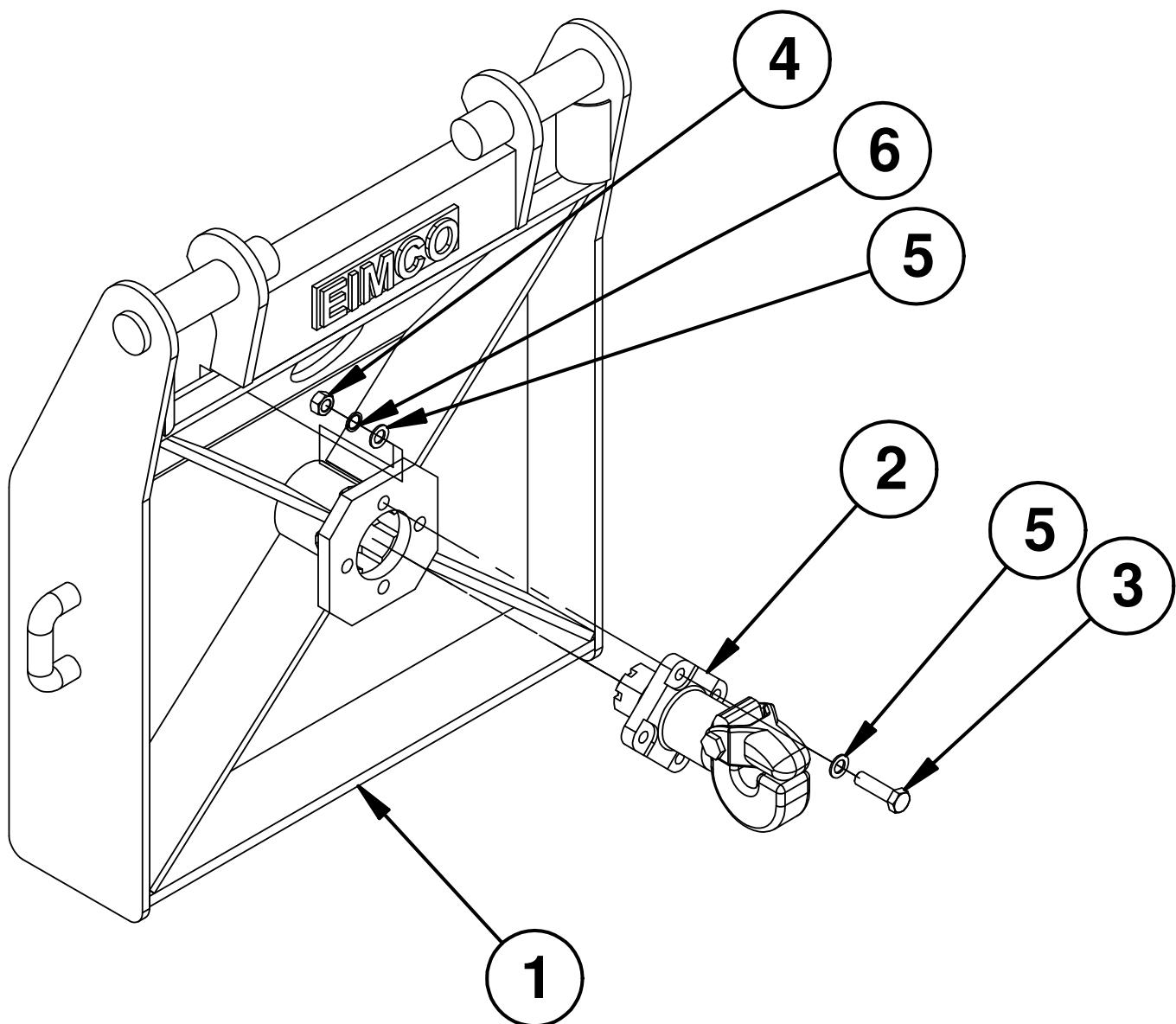
REV. 1

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-486015	1		Fire Extinguisher, Quell 4.5Kg

A2U900-190062  
REV. 2

**TOWING GROUP, TRAILER**

08-03



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-03**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

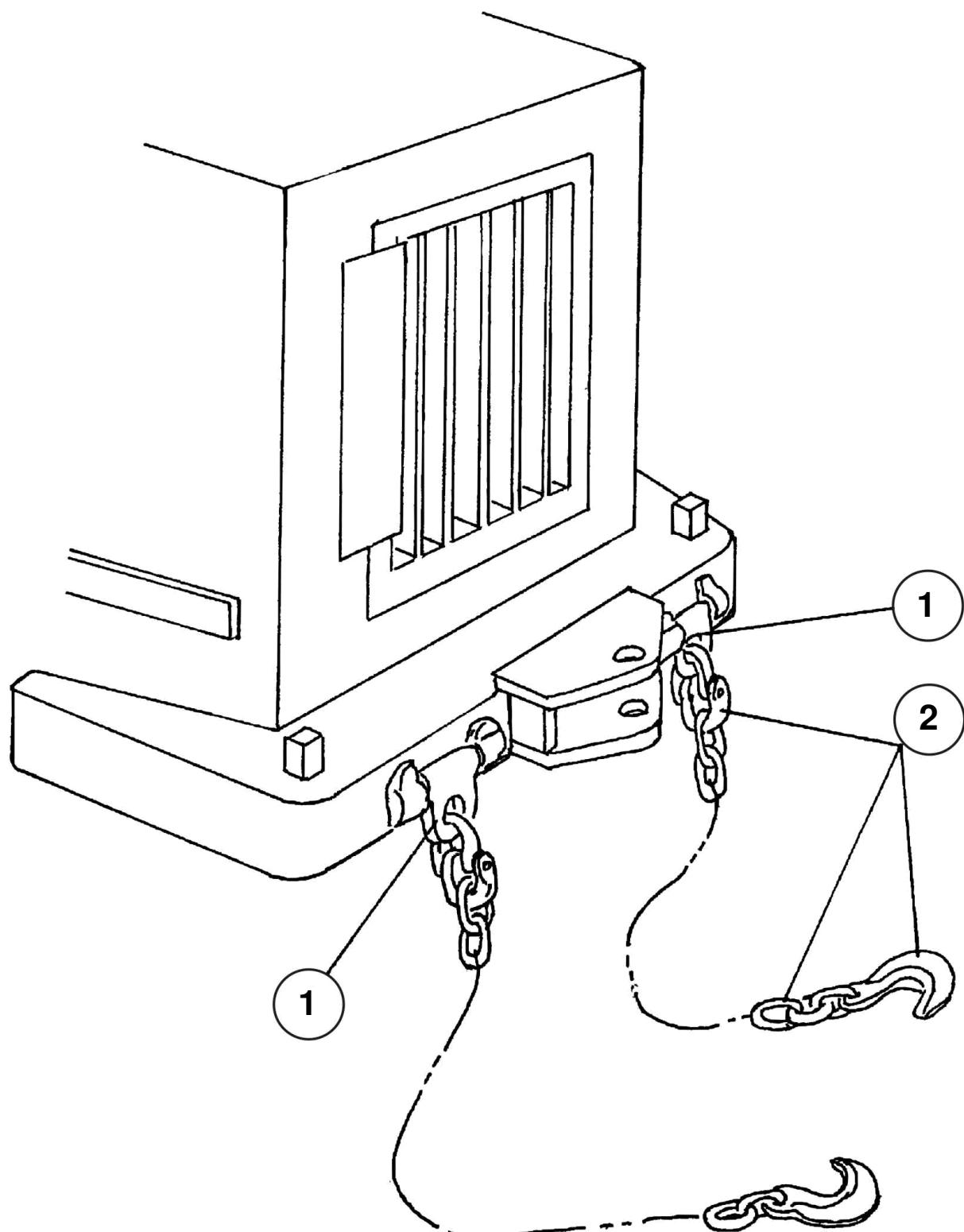
A2U900-190062

TOWING GROUP, TRAILER

08-03

REV. 2

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U913-162046		1	Backing Plate
2	A2U900-112002	08-03-01	1	Pintle Hook

**A2U130-190139****TOWING GROUP****08-03****REV. 2**

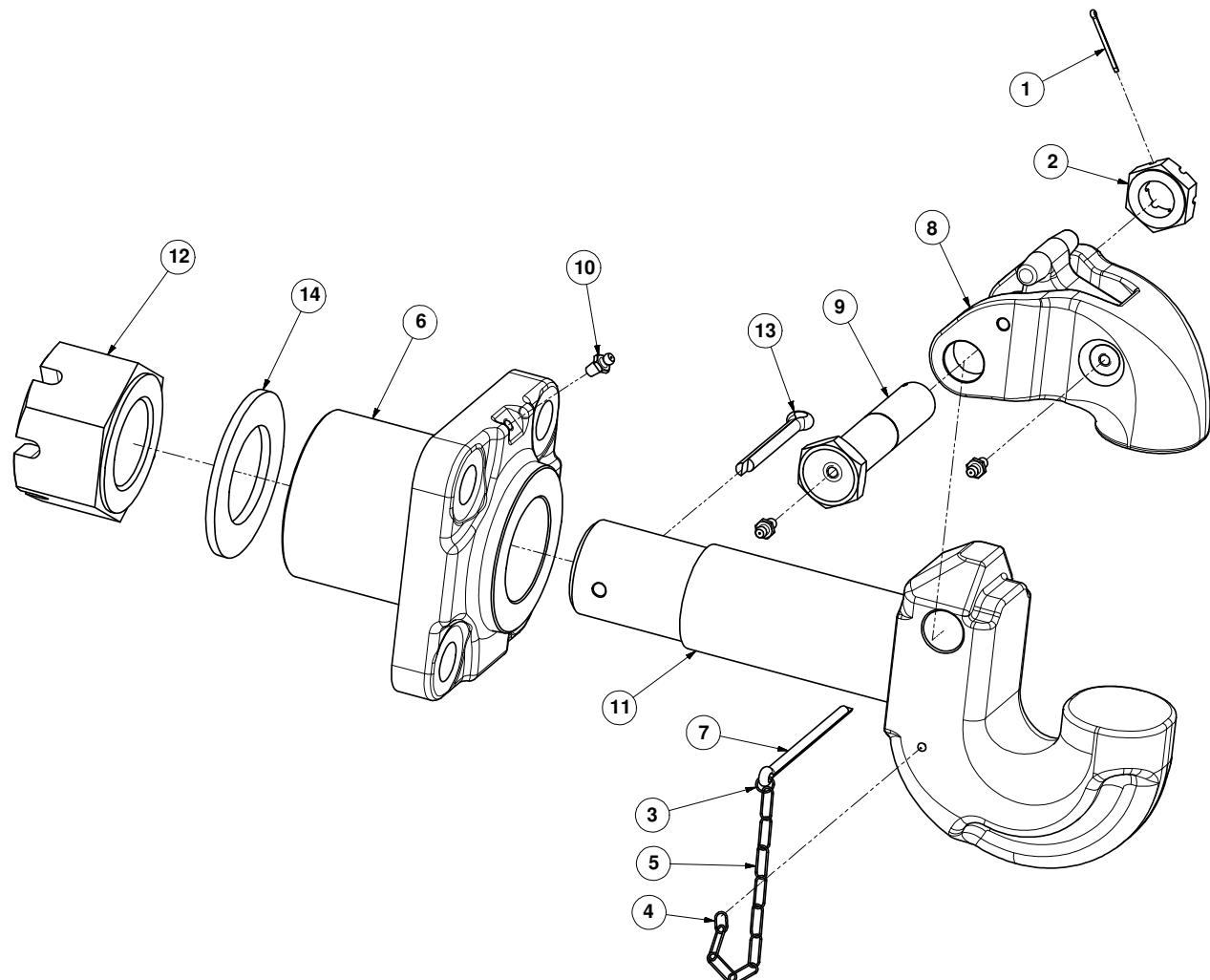
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-03**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****A2U130-190139****TOWING GROUP****08-03****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U130-191455	2	2	Tie Down Lug
2	A2U130-192034	2	2	Chain Assembly

**A2U900-112002****PINTLE HOOK****08-03-01****REV. 1**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-03-01**

Sandvik Underground Mining Flameproof Equipment

**A2U900-112002****PINTLE HOOK****08-03-01****REV. 1**

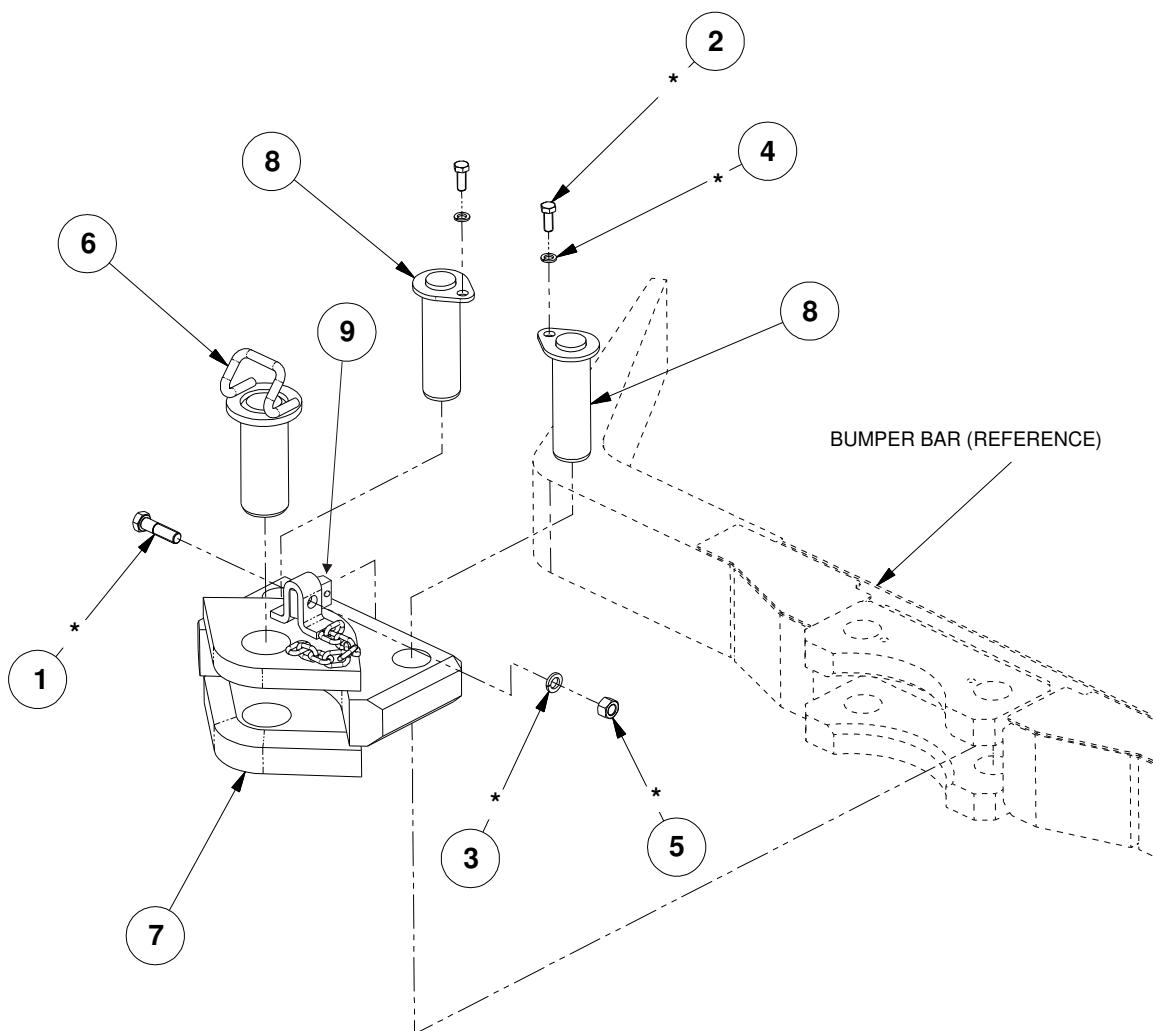
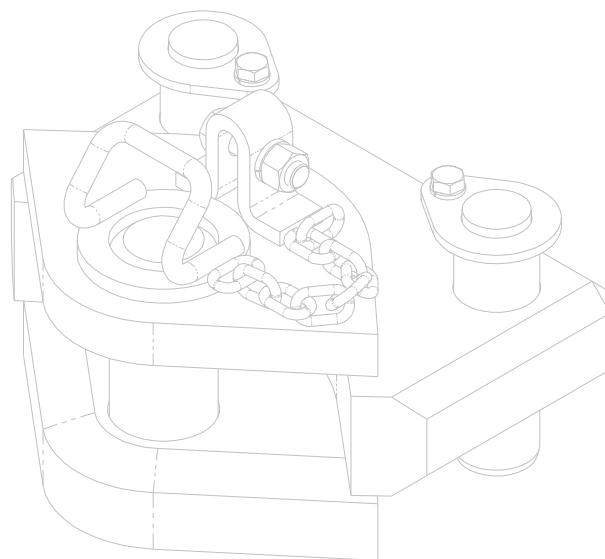
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	H3H-E-552-1		1	Split pin 2.5 Dia x 32 Long
2	H3H120-2		1	Slotted Lock Nut
3	H3H127		1	Chain Fixing Ring
4	H3H128-1		1	Chain End Link
5	H3H196		1	Retaining Chain
6	H3H749		1	Body
7	H3H757		1	Split pin 5.0 Dia x 90 Long
8	H3H764-5A		1	Overlock
9	H3H766-2		1	Screw Hex Head
10	H3H767		3	Grease Nipple 1/8"
11	H3H776-2		1	Towing Hook
12	H3H780		1	Slotted Lock Nut
13	H3H781-1		1	Split pin 5.0 Dia x 90 Long
14	H3H783-1		1	Washer

A2U220-100039

**TOW HITCH GROUP**

08-04

REV. 5



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

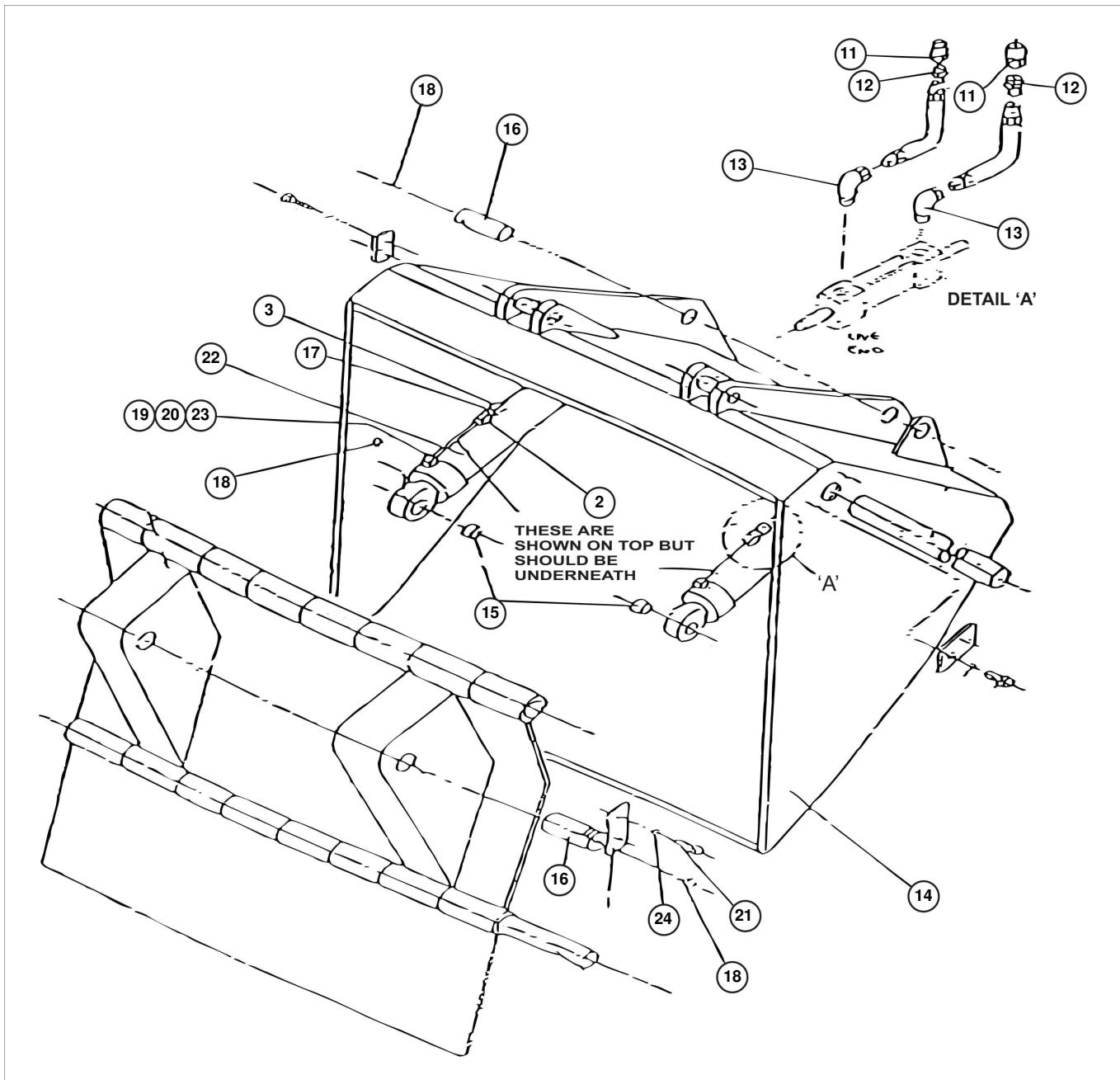
**A2U220-100039****TOW HITCH GROUP****08-04****REV. 5**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	445402941*	1	1	Hex Hd Bolt M16 x 60 LG
2	445502843*	2	1	Hex Hd Bolt M12 x 30 LG
3	450081030*	1	1	Washer, Spring M16
4	450081124*	4	1	Washer, Spring M12
5	455309040*	1	1	Nut, Hex M16
6	A2U130-1911190*	1	1	Pin, Towing
7	A2U220-112012	1	1	Tow Hitch
8	A2U220-193397	2	1	Pin, Tow Hitch Mount
9	A2U900-1911345	1	1	Locking Plate
*	BD00005593	1	1	Fasteners Kit

**A2U913-160122**  
**REV. 4**

**BUCKET GROUP, QDS 3.1m<sup>3</sup> (4  
cu.yd.)**

**08-07**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 08-07**

**Sandvik Underground Mining Flameproof Equipment**

**BUCKET GROUP, QDS 3.1m3 (4  
cu.yd.)**

08-07

**A2U913-160122****REV. 4**

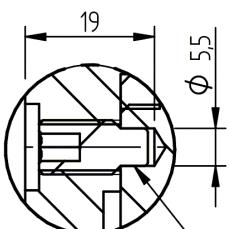
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	103-04399		4	KEEPER PLATE
2	911-33018		2	MANIFOLD ASSY
3	911-33022		2	MANIFOLD
	A2U913-545013	08-07-03	1	EJECTOR LINES
11	AFP1010-4/5		1	COUPLING ASSY
12	D15-812		2	FITTING
13	D17-812		2	ELBOW
14	A2U913-161168	08-07-06	1	STRAIGHT LIP BUCKET, 3.1m3
	A2U913-161176	08-07-06	1	SPADE LIP BUCKET 3.1m3
15	BD00026450		4	BEARING (I)
16	HRB197		4	PIN
17	LPA17		4	BAR TIE
18	P1FG		4	GREASE NIPPLE 1/8" PT ST
19	S2724		4	O_RING (I)
20	T6GG28		16	CAPSCREW
21	T8GG16		4	CAPSCREW
22	BD00013427	08-07-02	2	CYLINDER, BUCKET EJECT BD00014047 SEAL KIT FOR CYLINDER
23	W6GF		16	WASHER, SPRING
24	W8GF		4	WASHER, SPRING
	AFP1010-4/5		1	COUPLING ASSY (not shown)

BD00013427

## EJECTOR CYLINDER ASSEMBLY

08-07-02

REV. 1

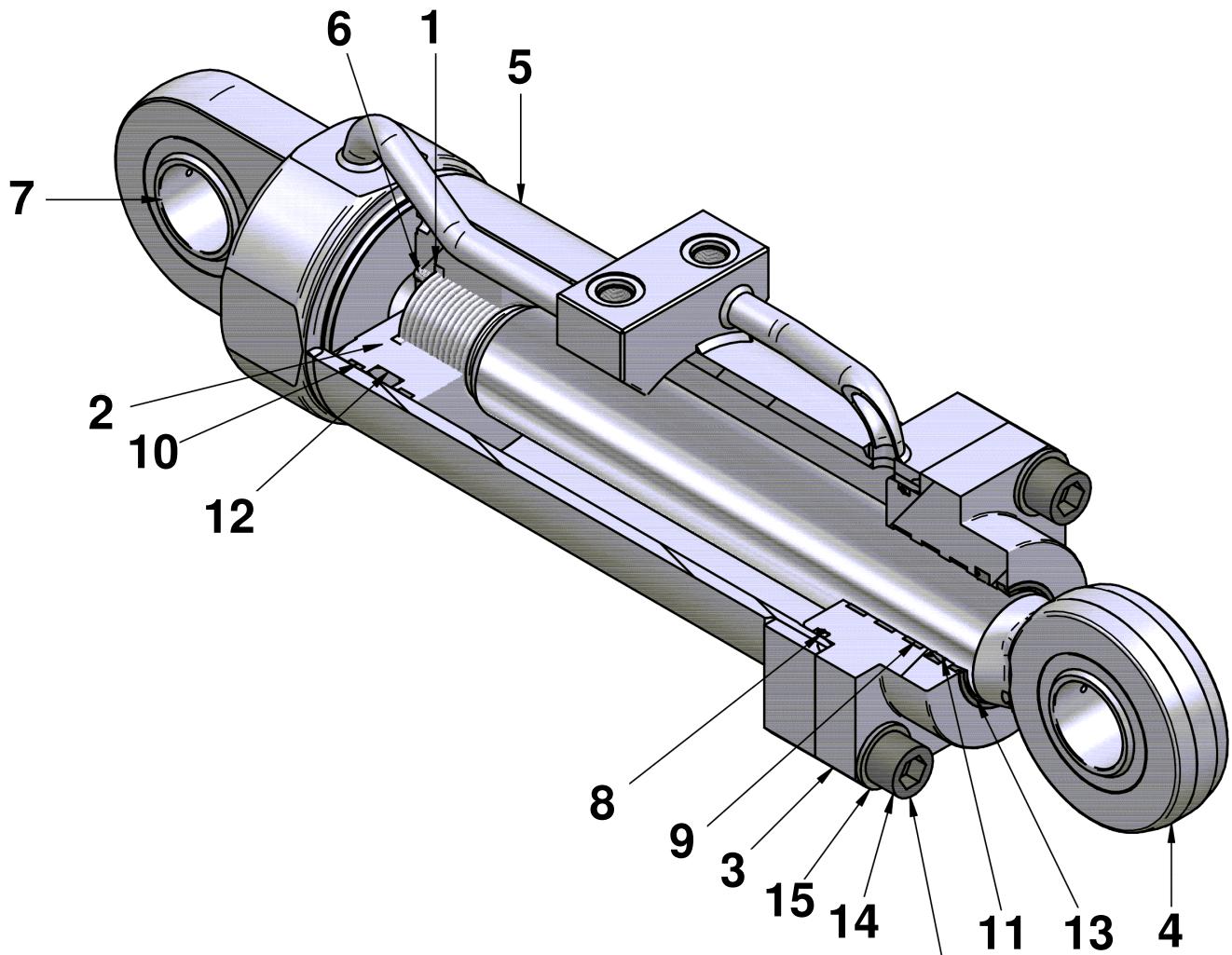
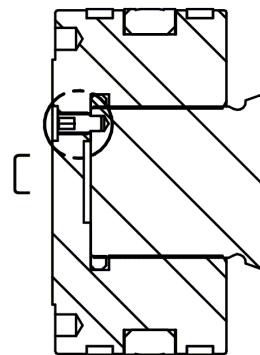


DETAIL C

## SECTION THRU PISTON CONNECTION

1. DEGREASE PISTON AND ROD THREAD
2. APPLY LOCTITE 243
3. TORQUE PISTON THREAD, 800Nm MIN.
4. DRILL FOR SCOTCH KEY.
5. APPLY LOCTITE 5452 TO SET SCREW.
6. TORQUE SET SCREW TO 30-35Nm

Socket Set Screw, Dog Point M8 x 16  
Degrease Prior to Assembly  
Apply Loctite 5452 Thread Seal  
Torque to 30-35 Nm



TORQUE CAPSCREWS TO 225Nm

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 08-07-02

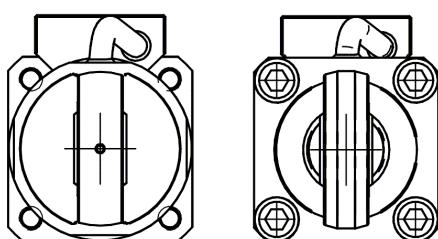
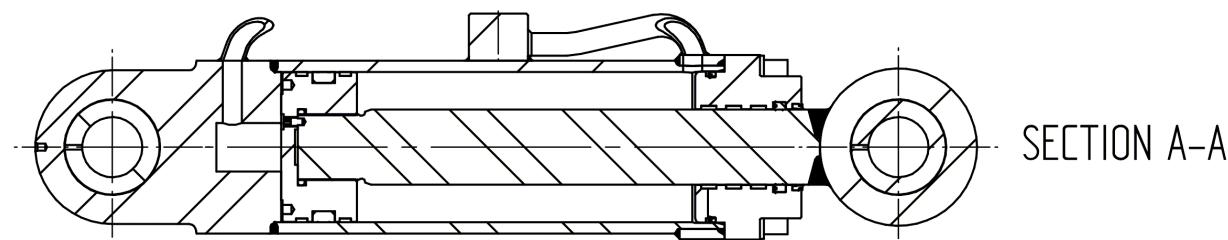
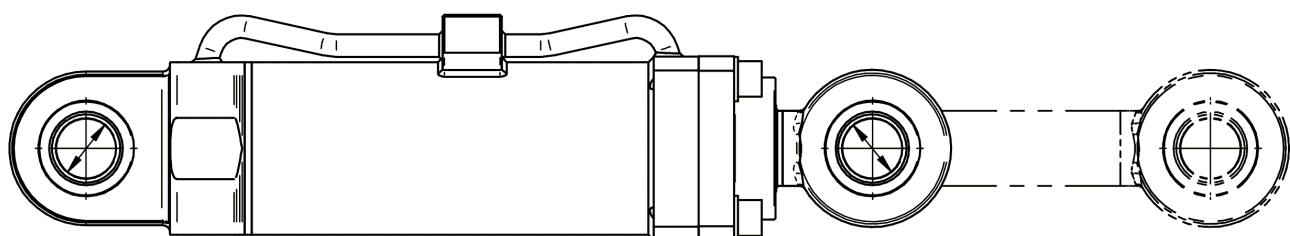
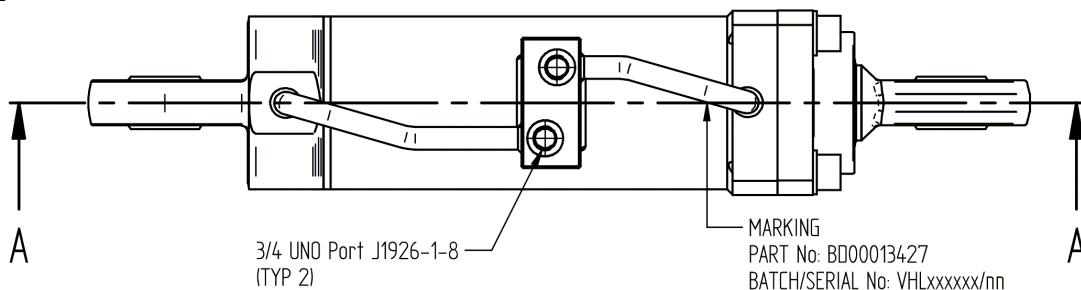
Sandvik Underground Mining Flameproof Equipment

BD00013427

## EJECTOR CYLINDER ASSEMBLY

08-07-02

REV. 1



## CYLINDER SPECIFICATION

Bore - 5.0in

Rod - 2.5in

Stroke - 286mm

Closed Centres - 665mm

Open Centres - 951mm

## PRESSURE

Working Pressure - 1500psi (104bar)

Test Pressure - 3000psi (207bar)

## SEAL KIT

BD00014047

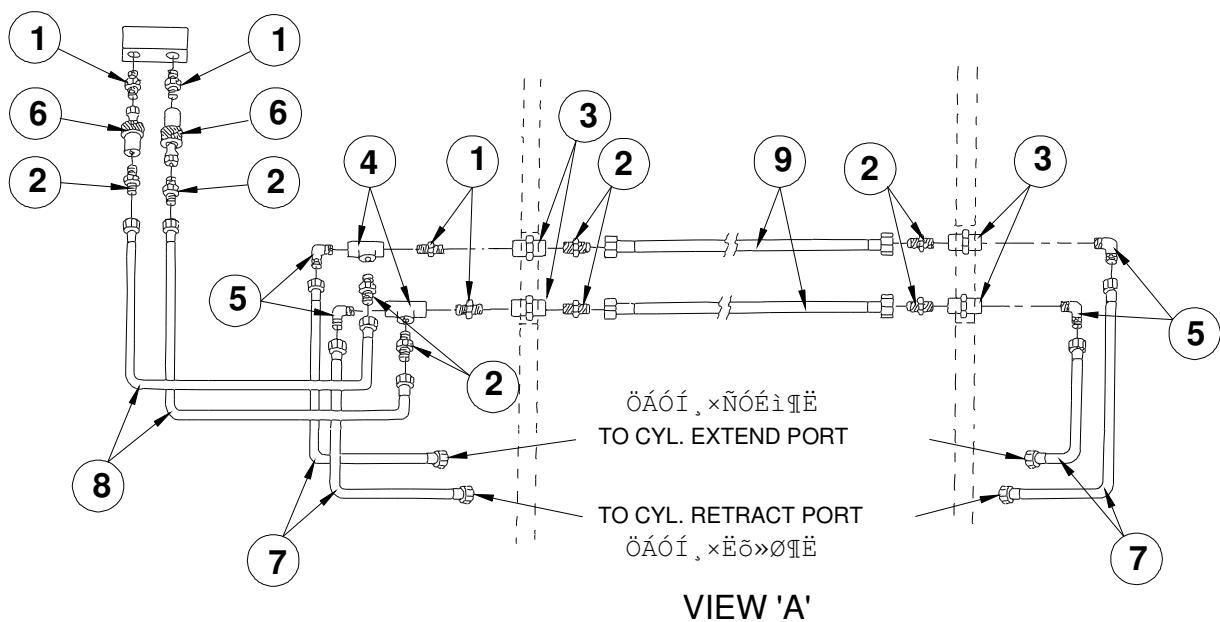
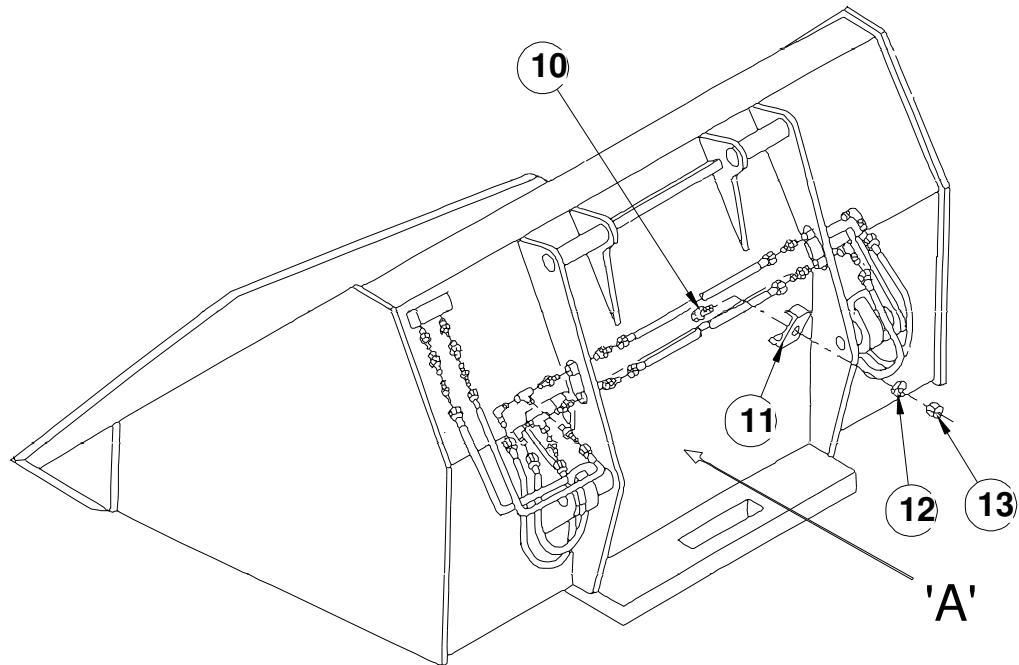
## ESTIMATED MASS

57.48 kg

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**BD00013427****EJECTOR CYLINDER ASSEMBLY****08-07-02****REV. 1**

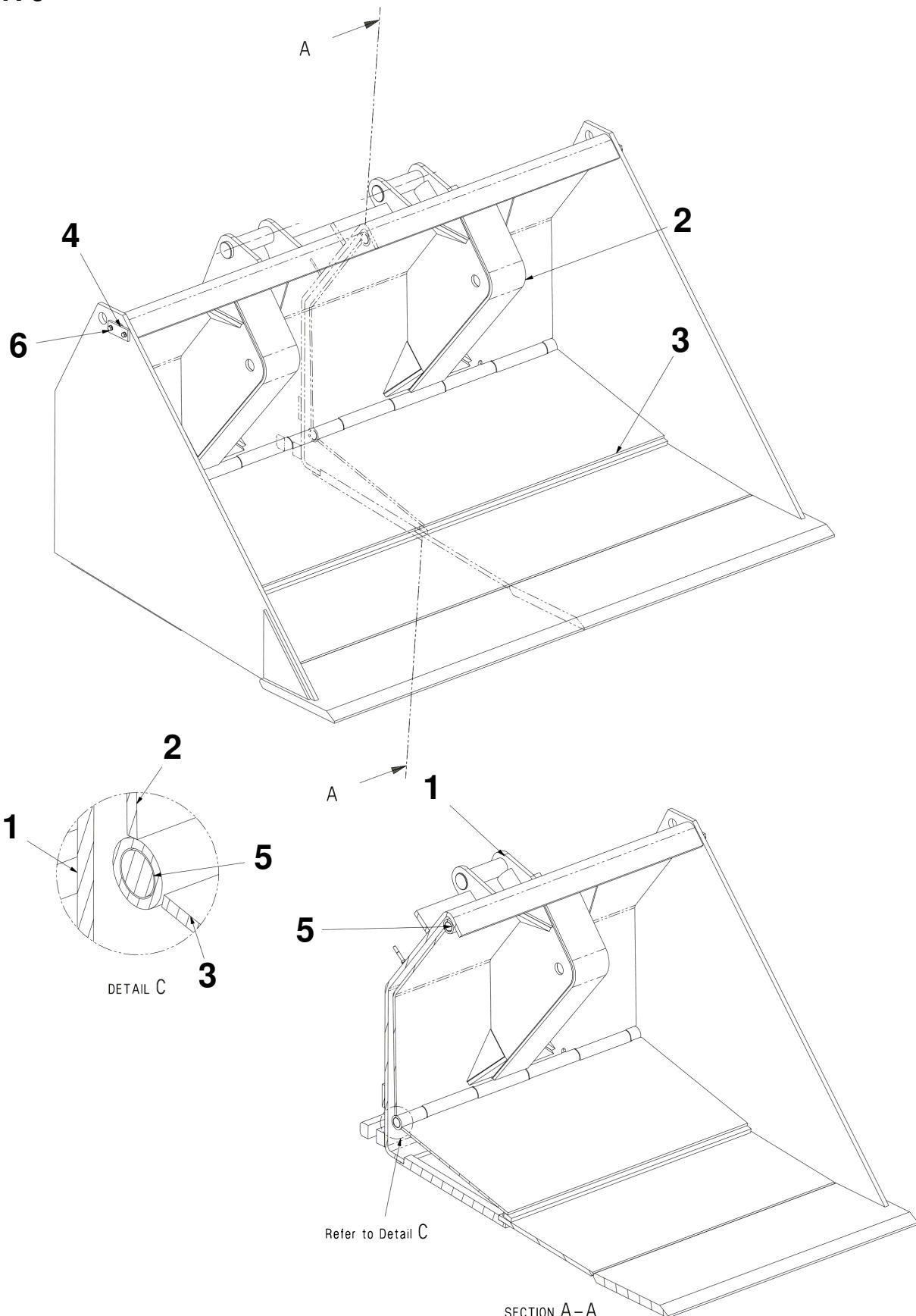
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BD00013626	1		Piston Locking Ring, 2.25in
2	BD00013653	1		Piston, Threaded, HD, 5.0in Bore x 2.5in Rod
3	BD00014039	1		Head, Bltd, 5.0in Bore x 2.5in Rod
4	BD00014040	1		Rod Group
5	BD00014042	4		Barrel Group
6	BD00022760	1		Socket Set Screw, Dog Point, M8 x 16
7	G746	2		Plain Spherical Bearing
8	HS155007	1		Hallite, Type 155, Static Seal
9	HS506418	3		Bearing Ring, Type 506, 2.75in x 0.5in x 0.125in
10	HS506518	2		Bearing Ring, Type 506, 5.0in x 0.375in x 0.125in
11	HS621063	1		Seal, Rod, Type 621, 2.5in x 3.0in x 0.375in
12	HS735064	1		Hallite, Type 735, Piston Seal Imperial
13	HS842102	1		Wiper, Rod, Type 842, 2.5in
14	S0020060SC	4		SHCS, M20 x 60
15	S0720	4		Washer, Hardened, M20

**A2U913-545013**
**QDS EJECT BUCKET LINES GROUP**
**08-07-03**
**REV. 2**


PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**PARTS MANUAL****A2U913-545013****QDS EJECT BUCKET LINES GROUP****08-07-03****REV. 2**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	DA4-0808	4	1	Nipple 1/2" NPT
2	D15-812	8	1	Nipple NPT 1/2" - JIC 3/4"
3	D67-8	4	1	Socket 1/2" NPT
4	D71-888	2	1	Tee Fitting 1/2"
5	D17-812	4	1	Elbow Fitting
6	A2U900-596153	2	1	Coupling Complete 1/2"
7	D2900-08-90-12A	4	1	Hose Assembly
8	D2900-08-70-12A	2	1	Hose Assembly
9	D2900-08-100-12A	2	1	Hose Assembly
10	T8GG32	1	1	Capscrew
11	AFP1008-69	1	1	Hose Clamp
12	W8GF	1	1	Washer, Spring
13	T8GG	1	1	Nut

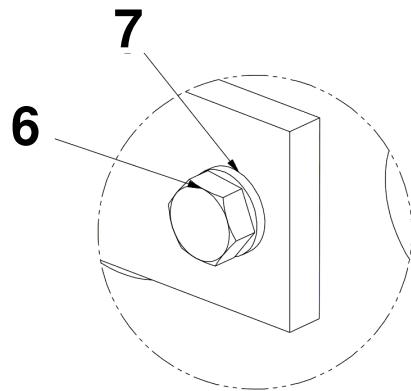
**A2U913-161168****QDS BUCKET 3.1 CUBIC METRE****08-07-06****REV. 9****PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS****SECTION 08-07-06**

Sandvik Underground Mining Flameproof Equipment

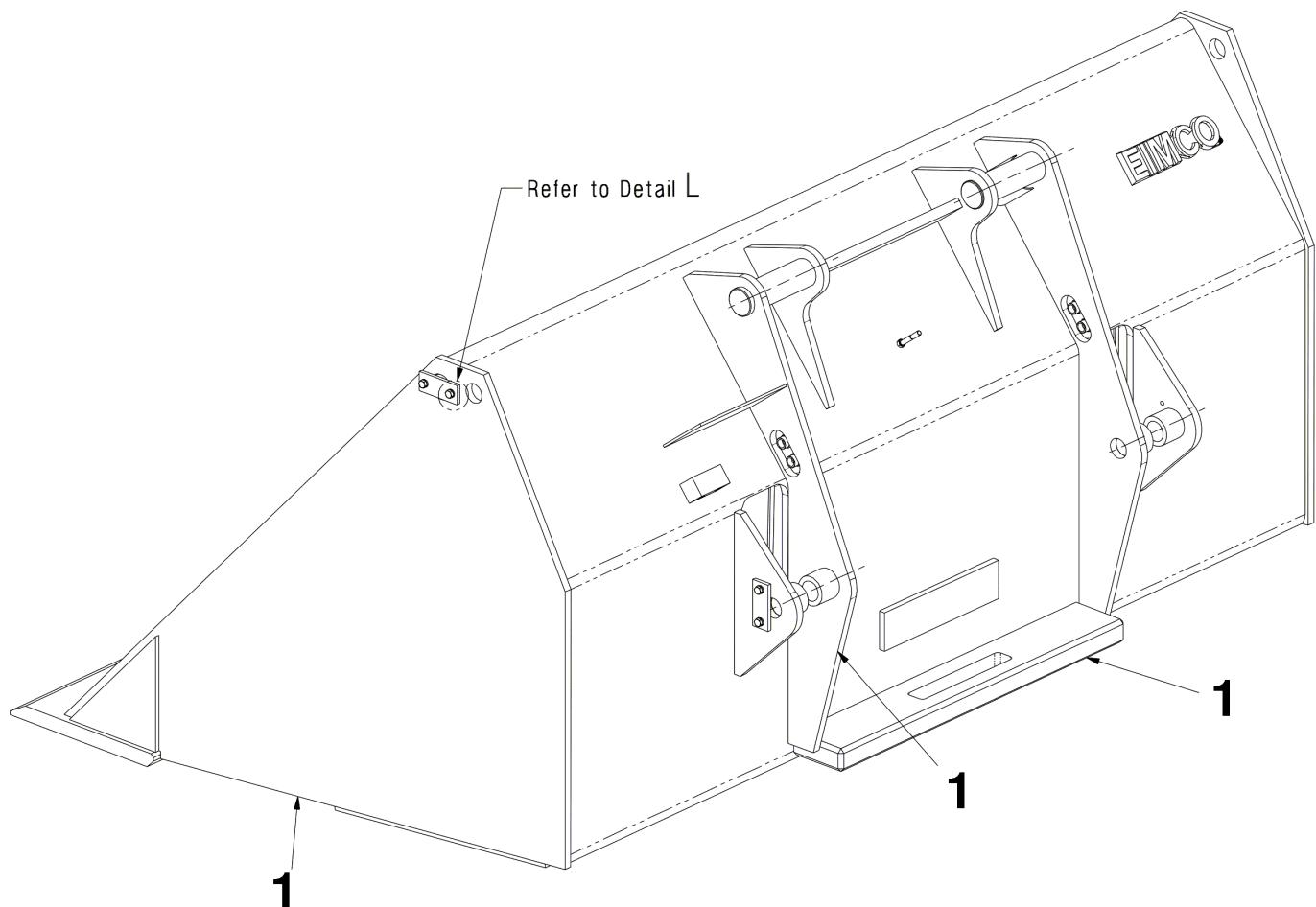
A2U913-161168  
REV. 9

**QDS BUCKET 3.1 CUBIC METRE**

08-07-06



DETAIL L



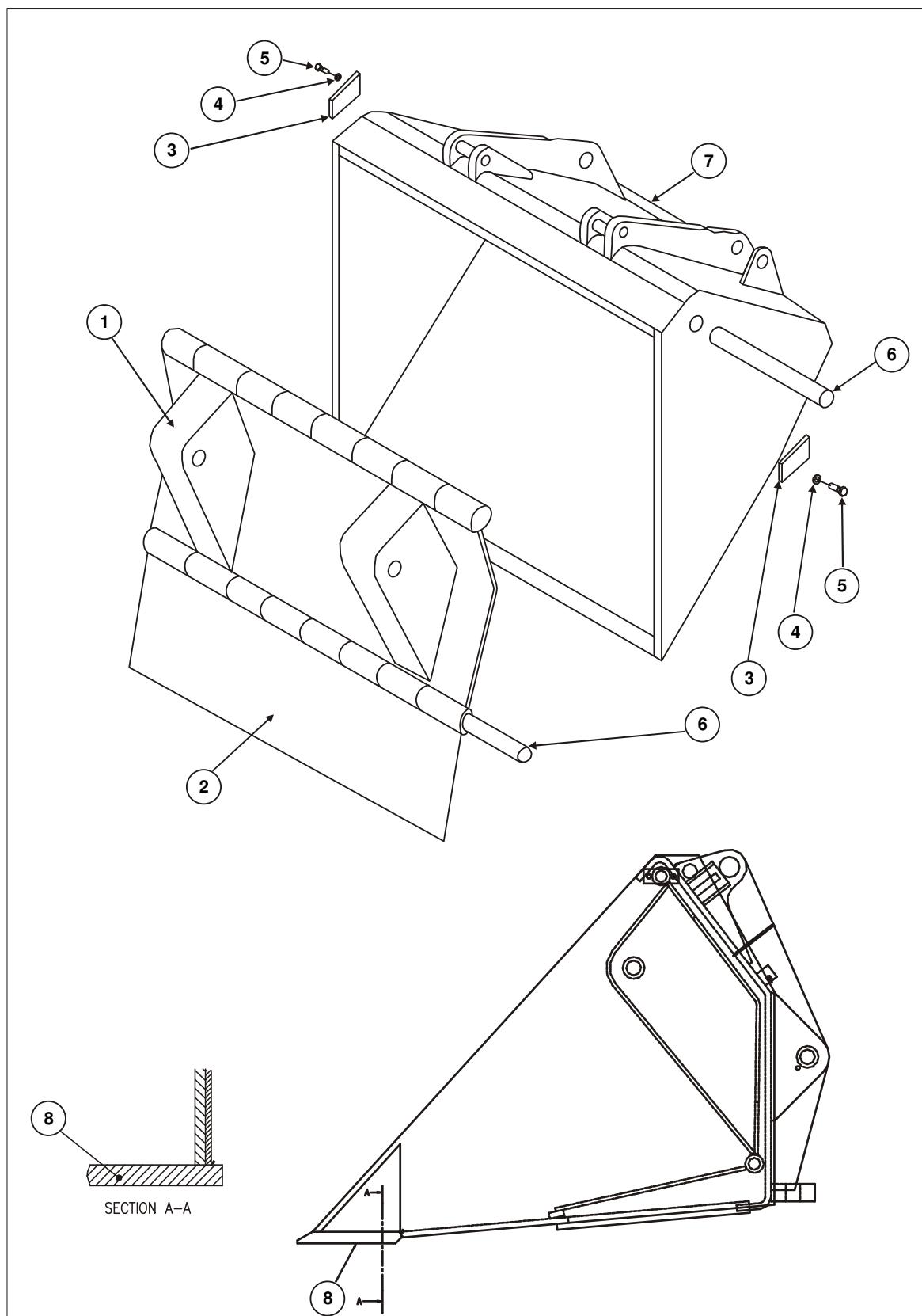
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 08-07-06

Sandvik Underground Mining Flameproof Equipment

**A2U913-161168****QDS BUCKET 3.1 CUBIC METRE****08-07-06****REV. 9**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U913-164052	1	1	BUCKET BODY
2	A2U913-163022	1	1	PUSH PLATE - UPPER
3	A2U913-163023	1	1	PUSH PLATE - LOWER
4	A2U130-191818	4	4	KEEPER PLATE
5	A2U913-165068	2	2	PIVOT BAR
6	445502842	8	8	BOLT HEX. HD. M12 x 25mm
7	450080824	8	8	WASHER, SPRING 12mm

**A2U913-161176****SPADEF LIP BUCKET 4 CU YD  
(OPTION)****08-07-06****REV. 5**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-07-06**

Sandvik Underground Mining Flameproof Equipment

**PARTS MANUAL****SPADE LIP BUCKET 4 CU YD  
(OPTION)**

08-07-06

**A2U913-161176****REV. 5**

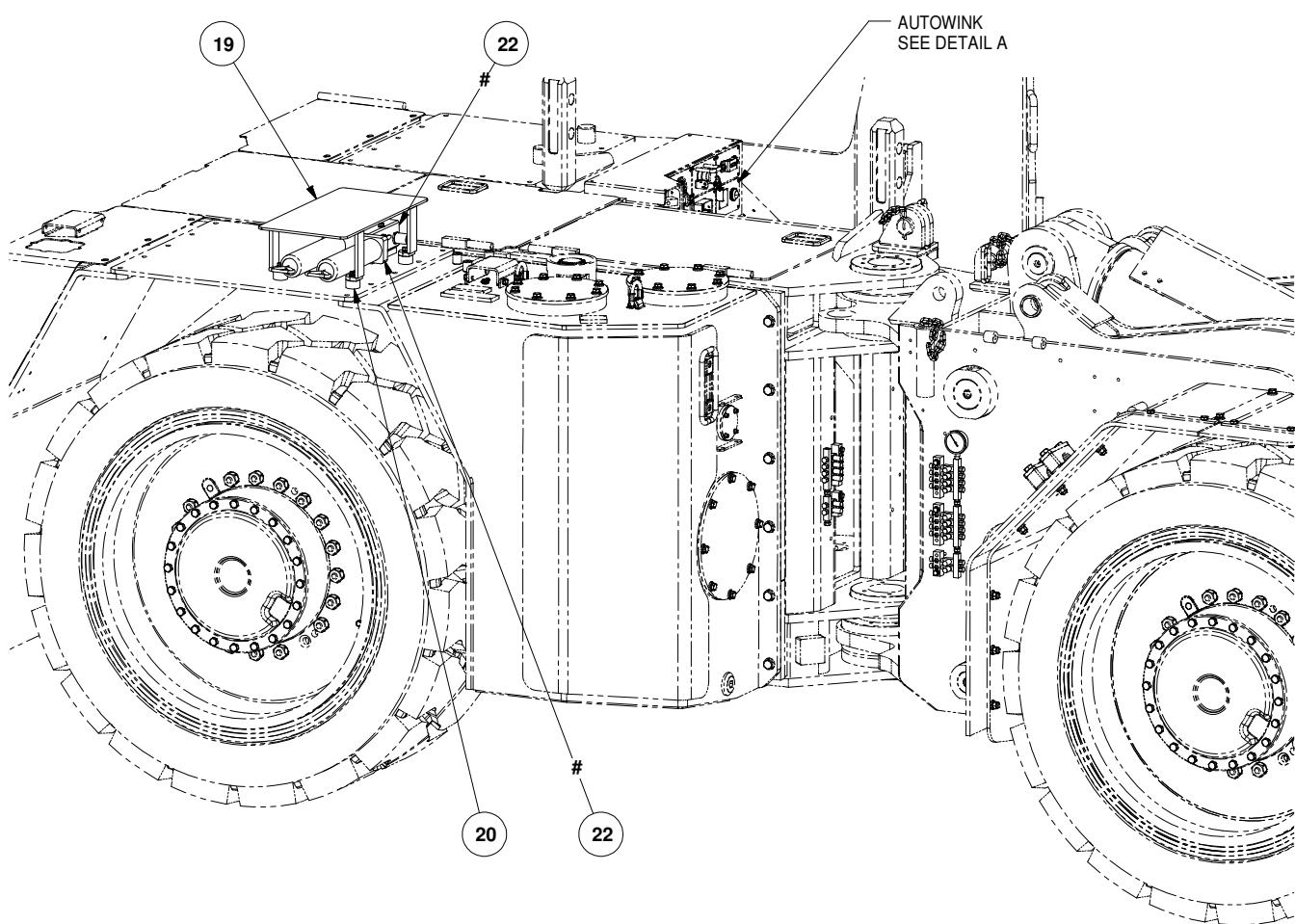
ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U913-163022	1	1	PUSH PLATE UPPER 4 CU YD
2	A2U913-163023	1	1	PUSH PLATE LOW 4 CU YD
3	A2U130-191818	2	1	KEEPER PLATE
4	W8GF	4	1	WASHER, SPRING
5	T8GG16	4	1	CAPSCREW
6	A2U913-165068	2	1	PIN HINGE 4 CU YD
7	A2U913-165062	1	1	LOCKING PLATE
8	A2U913-165076	1	1	BUCKET LIP, SPADE

BD00024984

**AUTO LUBE SYSTEM LS190/ 191**

08-15

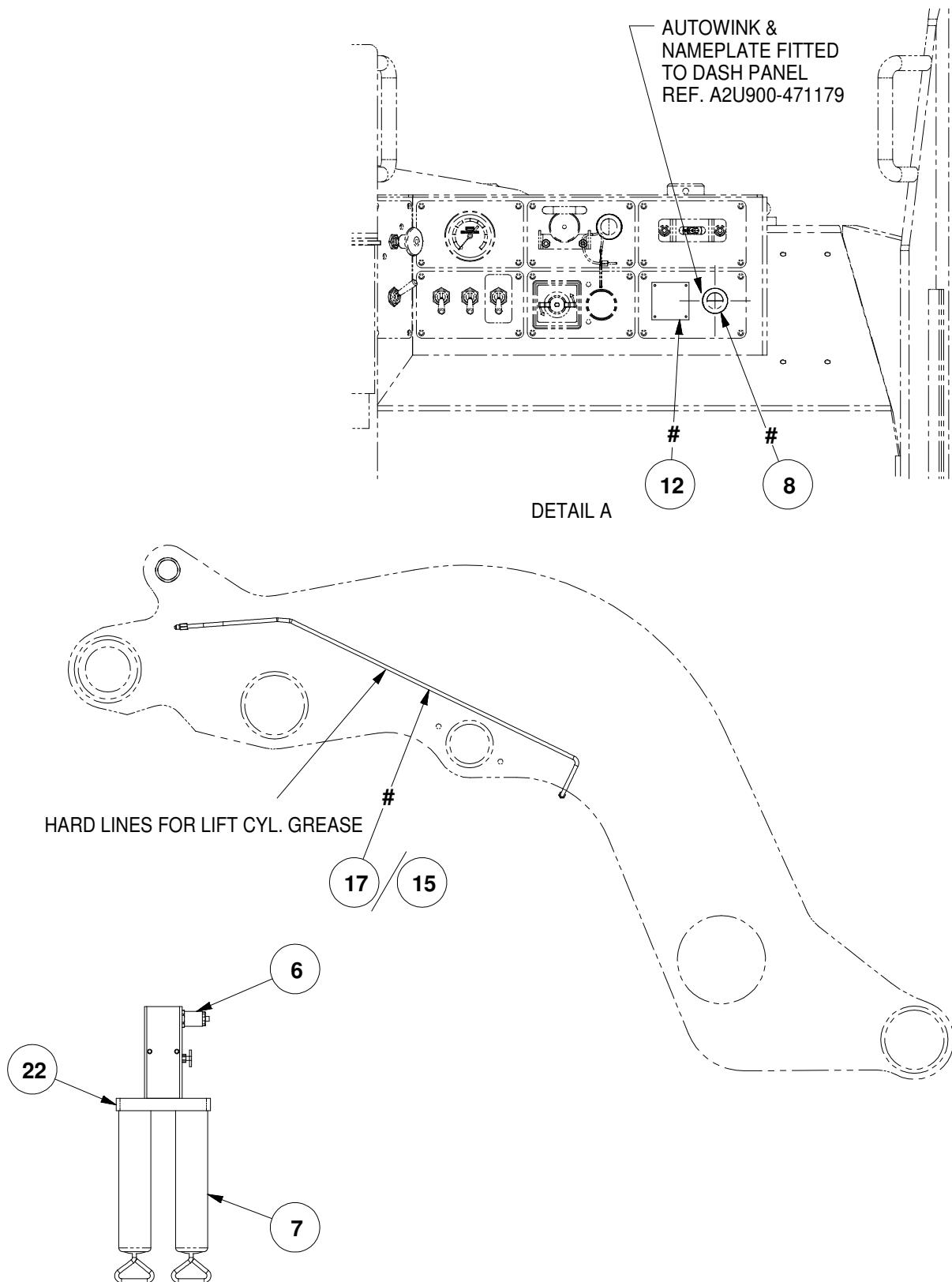
REV. 1



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-15**

Sandvik Underground Mining Flameproof Equipment

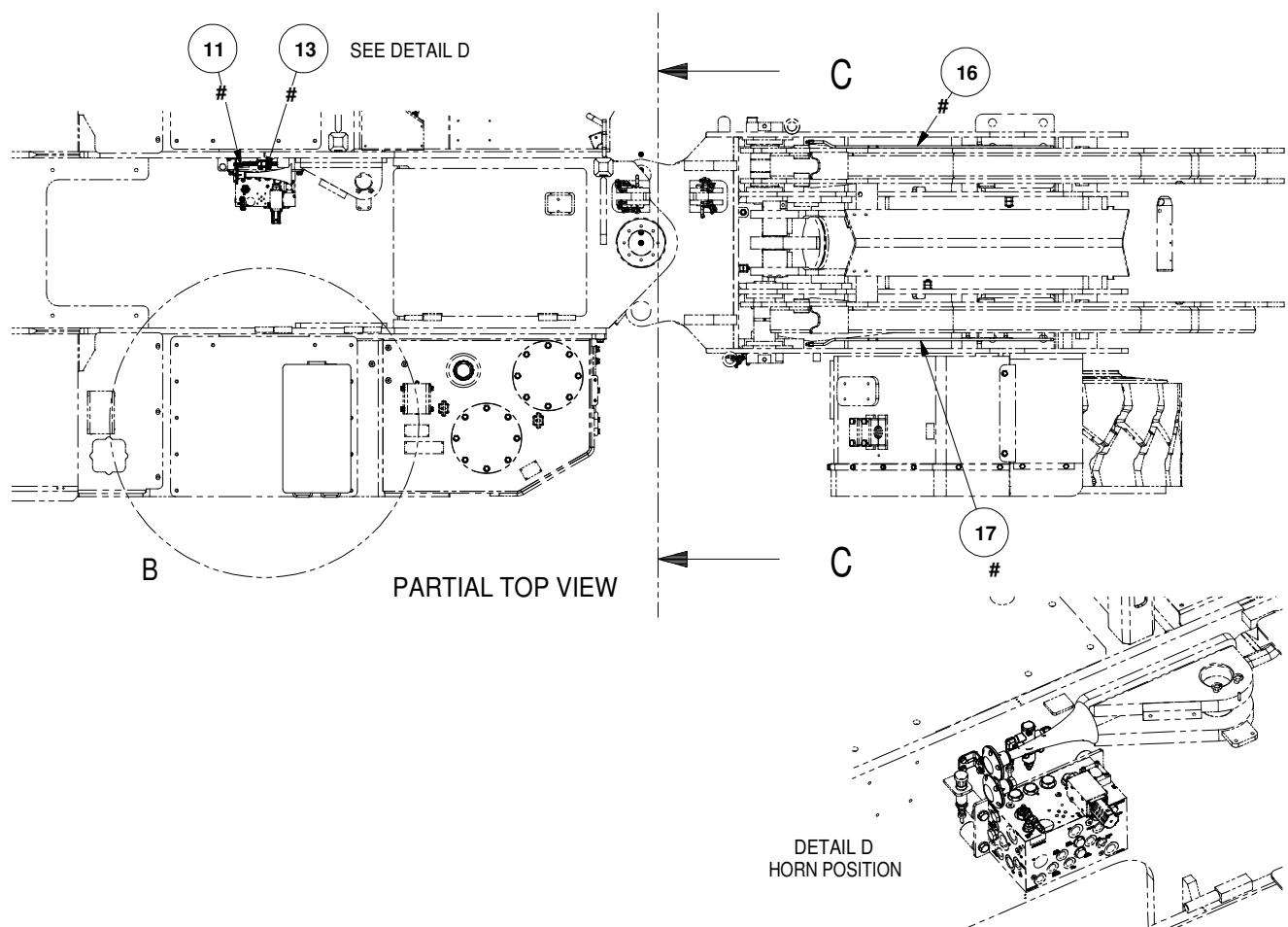
**BD00024984**
**AUTO LUBE SYSTEM LS190/ 191**
**08-15**
**REV. 1**

**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

BD00024984

**AUTO LUBE SYSTEM LS190/ 191**

08-15

REV. 1



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-15**

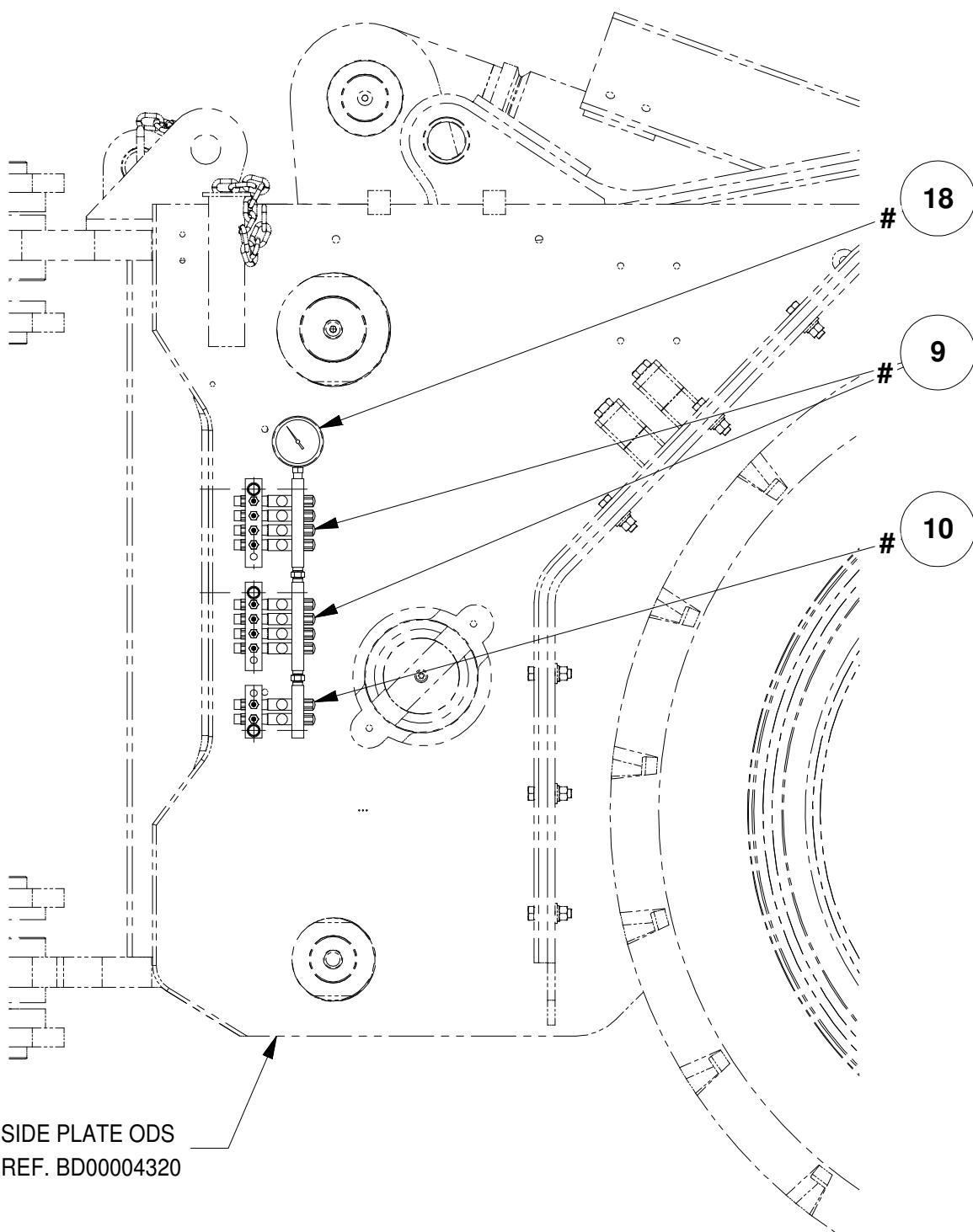
Sandvik Underground Mining Flameproof Equipment

BD00024984

**AUTO LUBE SYSTEM LS190/ 191**

08-15

REV. 1

**PARTIAL SIDE VIEW**

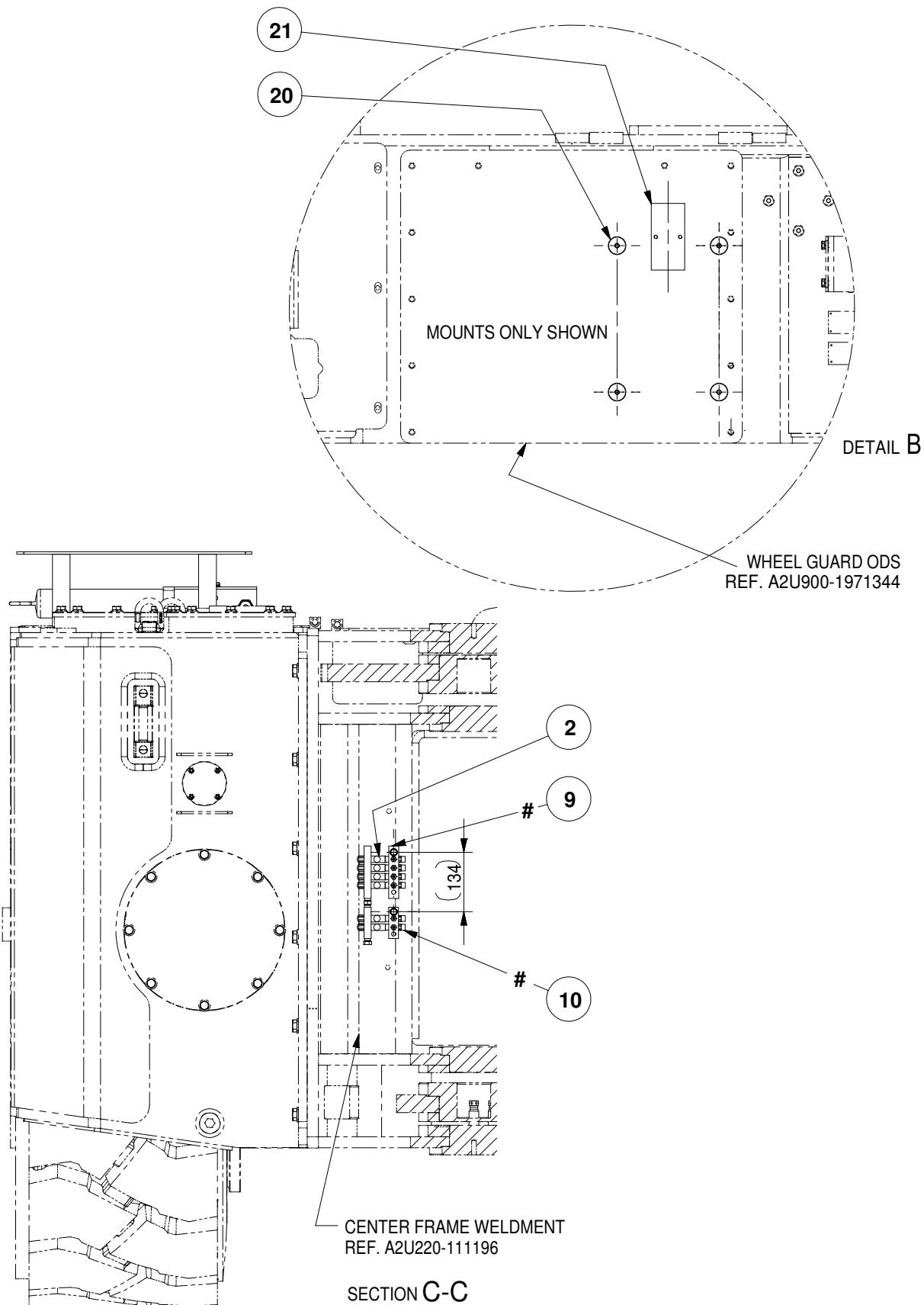
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**BD00024984**

**AUTO LUBE SYSTEM LS190/ 191**

**08-15**

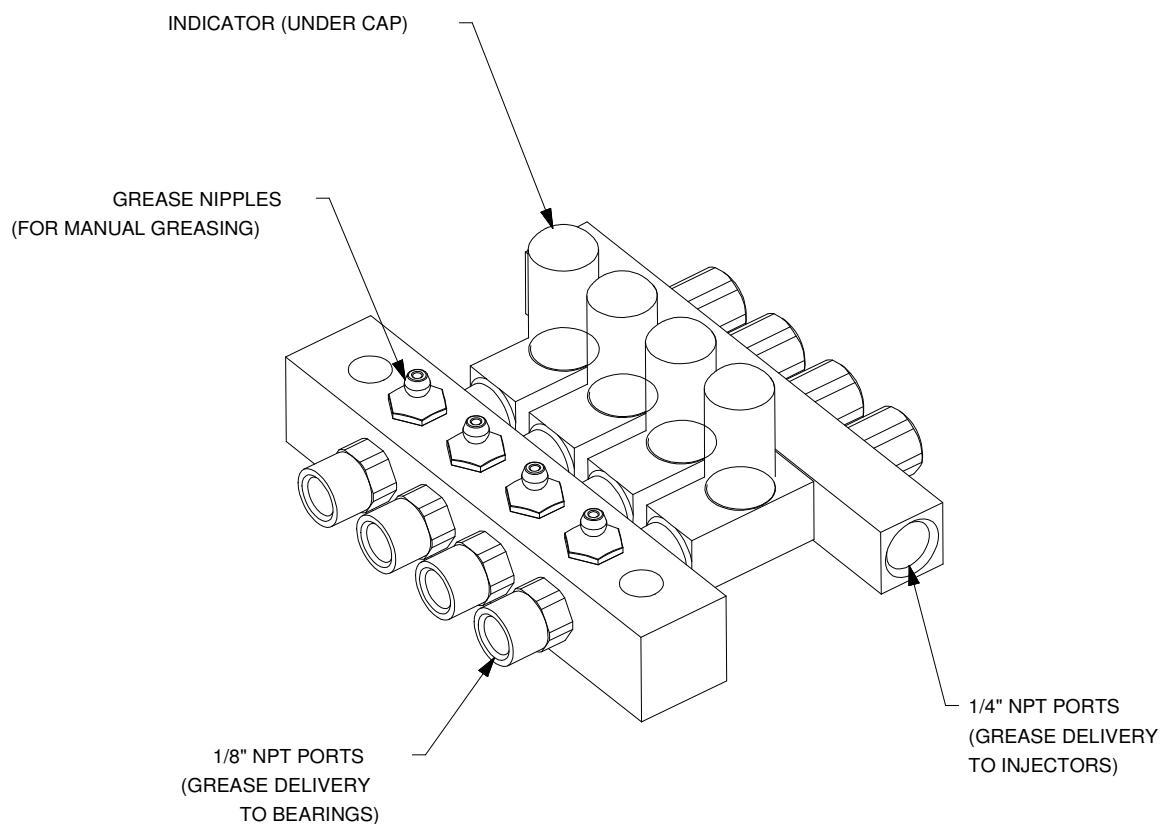
**REV. 1**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**BD00024984****AUTO LUBE SYSTEM LS190/ 191****08-15****REV. 1**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BU00000120		1	FASTENER KIT
2	BD00028257			CAP, HYDEN194 GREASE INJECTOR
3	BD00028253			REPAIR KIT - PUMP END CAP
4	BD00028252			REPAIR KIT - PUMP MAIN BODY
5	BD00028239			PNEUMATIC VALVE - LOW LEVEL ALARM
6	BD00028238			PRESSURE REDUCING VALVE 1500PSI
7	BD00028236			CANISTER, GREASE, FOR LOW LEVEL ALARM
8	BD00028235			ROTOWINK
9	BD00028234	08-15-09		GREASE INJECTOR - 4 BANK
10	BD00028231	08-15-10		GREASE INJECTOR - 2 BANK
11	BD00028227			NEEDLE VALVE - FLOW CONTROL
12	BD00028218			NAME PLATE - NOT SOLD SEPARATELY
13	BD00028164			PNEUPHONIC HORN
#	BD00028158		1	HYDEN KIT LS190, LS191
15	BD00027936		1	HOSE KIT, HYDEN AUTO LUBE
16	BD00025188			HARD PIPE FOR LIFT CYL. GREASE DS
17	BD00025185			HARD PIPE FOR LIFT CYL. GREASE ODS
18	BD00025184			PRESSURE GUAGE 400 BAR
19	BD00024993		1	GREASE PUMP COVER
20	BD00024983		4	BOSS 40 OD x 25 LG M10
21	BD00024978		1	GREASE PUMP MOUNT PLATE
22	BD00024929	08-15-22	1	GREASE PUMP, 2 CARTRIDGE RESERVIOR

**BD00028234****GREASE INJECTOR - 4 BANK****08-15-09****REV. 0**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS



## PARTS MANUAL

**BD00028234**

**GREASE INJECTOR - 4 BANK**

**08-15-09**

**REV. 0**

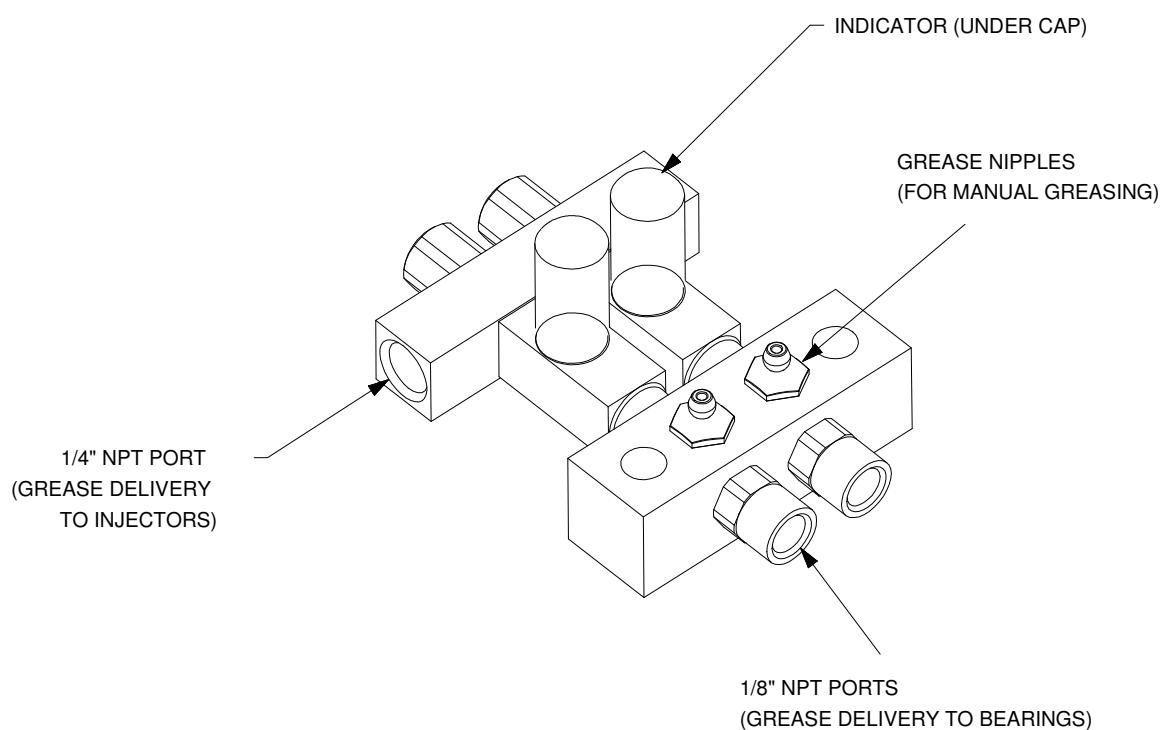
<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	BD00028234	1	1	GREASE INJECTOR - 4 BANK
2	BD00028257		1	CAP, HYDEN194 GREASE INJECTOR

BD00028231

**GREASE INJECTOR - 2 BANK**

08-15-10

REV. 0



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-15-10**

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

**BD00028231**

**GREASE INJECTOR - 2 BANK**

**08-15-10**

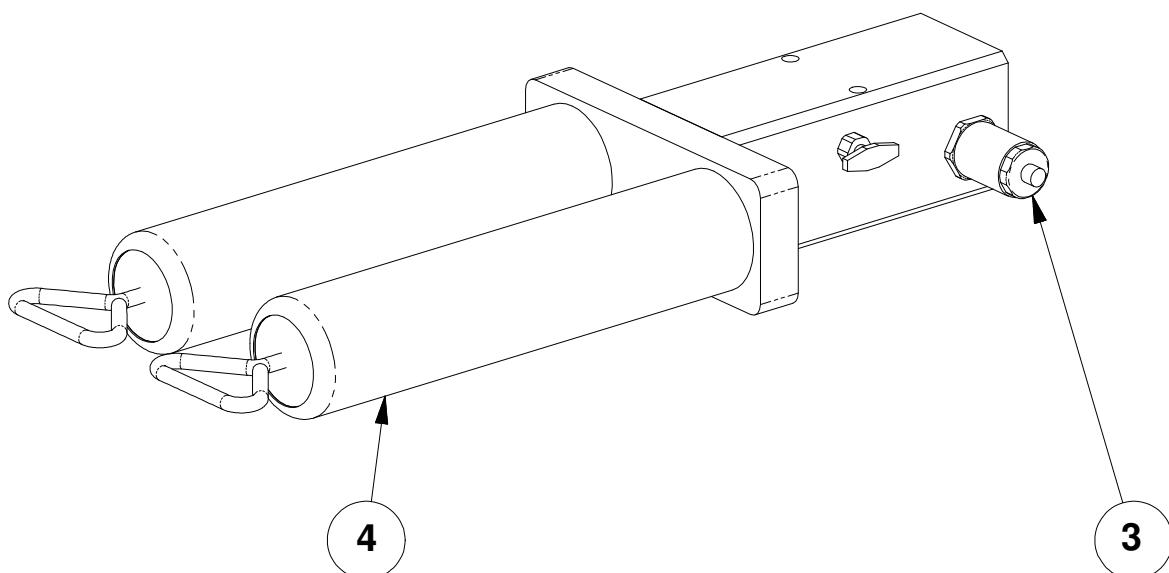
**REV. 0**

<b>ITEM</b>	<b>PART NO</b>	<b>PAGE</b>	<b>QTY</b>	<b>DESCRIPTION</b>
1	BD00028231	1	1	GREASE INJECTOR - 2 BANK
2	BD00028257		1	CAP, HYDEN194 GREASE INJECTOR

**BD00024929**  
**REV. 1**

**GREASE PUMP, 2 CARTRIDGE  
RESERVIOR**

**08-15-22**



**PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS**

**SECTION 08-15-22**

**Sandvik Underground Mining Flameproof Equipment**



## PARTS MANUAL

### GREASE PUMP, 2 CARTRIDGE RESERVIOR

08-15-22

BD00024929

REV. 1

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	BD00028253			REPAIR KIT - PUMP END CAP
2	BD00028252			REPAIR KIT - PUMP MAIN BODY
3	BD00028238			PRESSURE REDUCING VALVE 1500PSI
4	BD00028236			CANISTER, GREASE, FOR LOW LEVEL ALARM



NFP1000  
REV.

SANDVIK NFP1000 FIRE  
SUPPRESSION

08-24

Sandvik NFP1000 Fire Suppression System



Sandvik Mining and Construction  
Adelaide Ltd

ABN 73 007 980 645



ISO 9001 Lic 12239  
SAI Global  
Manufactured under quality systems certified as complying with ISO 9001 by an accredited certification body

# NFP1000

**PRE-ENGINEERED  
FOAM FIRE  
SUPPRESSION  
SYSTEM  
FOR  
MOBILE EQUIPMENT**



**PARTS MANUAL**

5<sup>th</sup> Edition – January 2007 Revision (April 07 update)  
© Publication Number 69 343 094

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-24**

Sandvik Underground Mining Flameproof Equipment

**NFP1000****SANDVIK NFP1000 FIRE  
SUPPRESSION****08-24****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	NFP1000A	08-24-01		SUPPLY LAYOUT
2	NFP1000B	08-24-02		ACTIVATION LAYOUT
3	NFP1000C	08-24-03		DISCHARGE LAYOUT (HOSE RING MAIN)
4	NFP1000D	08-24-04		DISCHARGE LAYOUT (TUBE RING)
5	NFP1000E	08-24-05		AUTO DETECT ASSEMBLY
6	NFP1000F	08-24-06		VENT LINE EXTENSION
7	NFP1000G	08-24-07		LABELS
8	NFP1000H	08-24-08		FLUSHING KIT
9	NFP1000I	08-24-09		SOLENOID ACTIVATION
10	NFP1000J	08-24-10		ENGINE SHUTDOWN KIT
11	NFP1000K	08-24-11		ALARM ONLY KIT
12	NFP1000L	08-24-12		MODULE KIT
13	NFP1000M	08-24-13		CHARGING RIG
14	NFP1000N	08-24-14		CHARGING ASSEMBLY
15	NFP1000O	08-24-15		SERVICE KIT

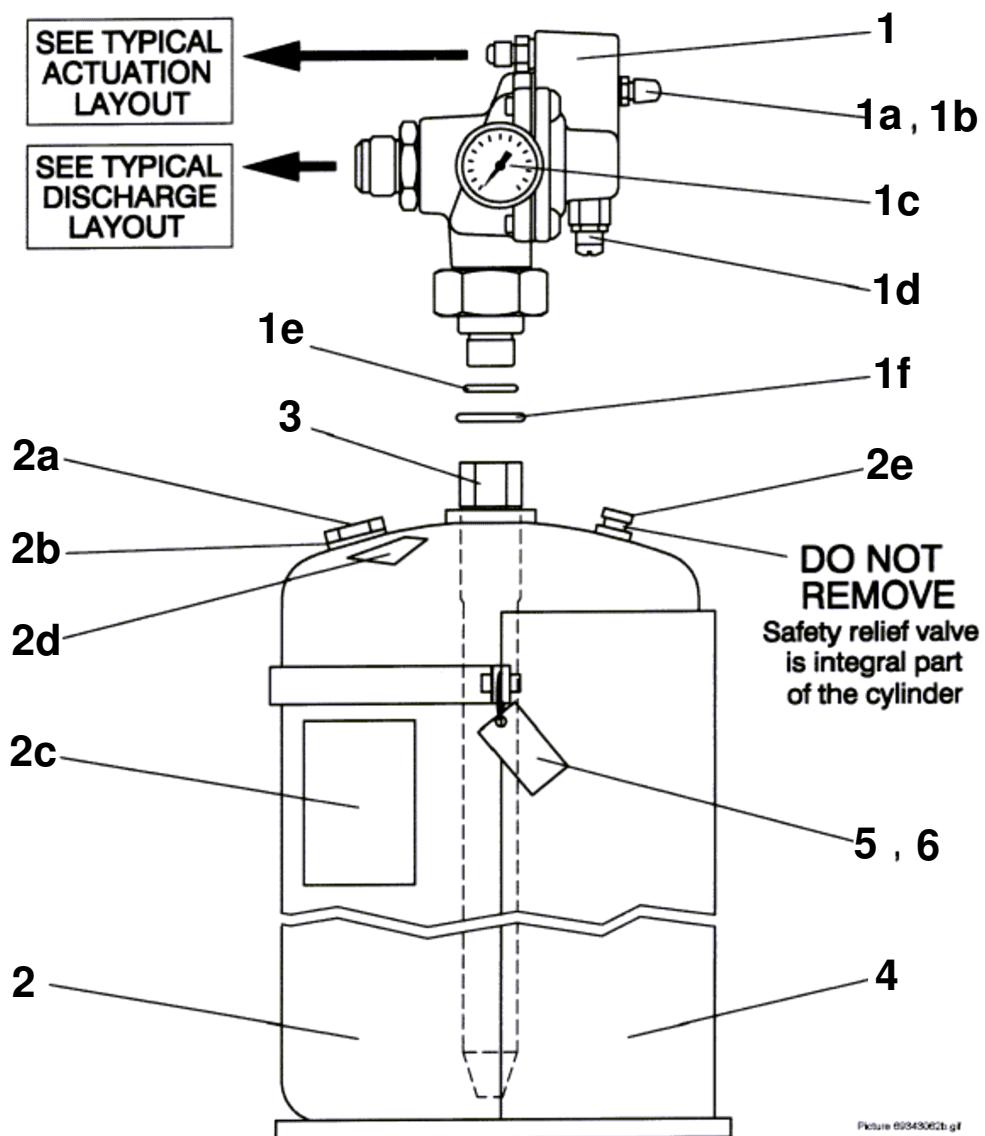
NFP1000A

## SUPPLY LAYOUT

08-24-01

REV.

Sandvik NFP1000 Fire Suppression System



SUPPLY  
LAYOUT  
(TYPICAL)

For reasons of durability and operator safety, all tanks are made from AS1449 grade 304 stainless steel and have an in-built pressure relief valve as per AS2613. Tanks are designed to AS3509S.

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 08-24-01

Sandvik Underground Mining Flameproof Equipment

**NFP1000A****SUPPLY LAYOUT****08-24-01****REV.**

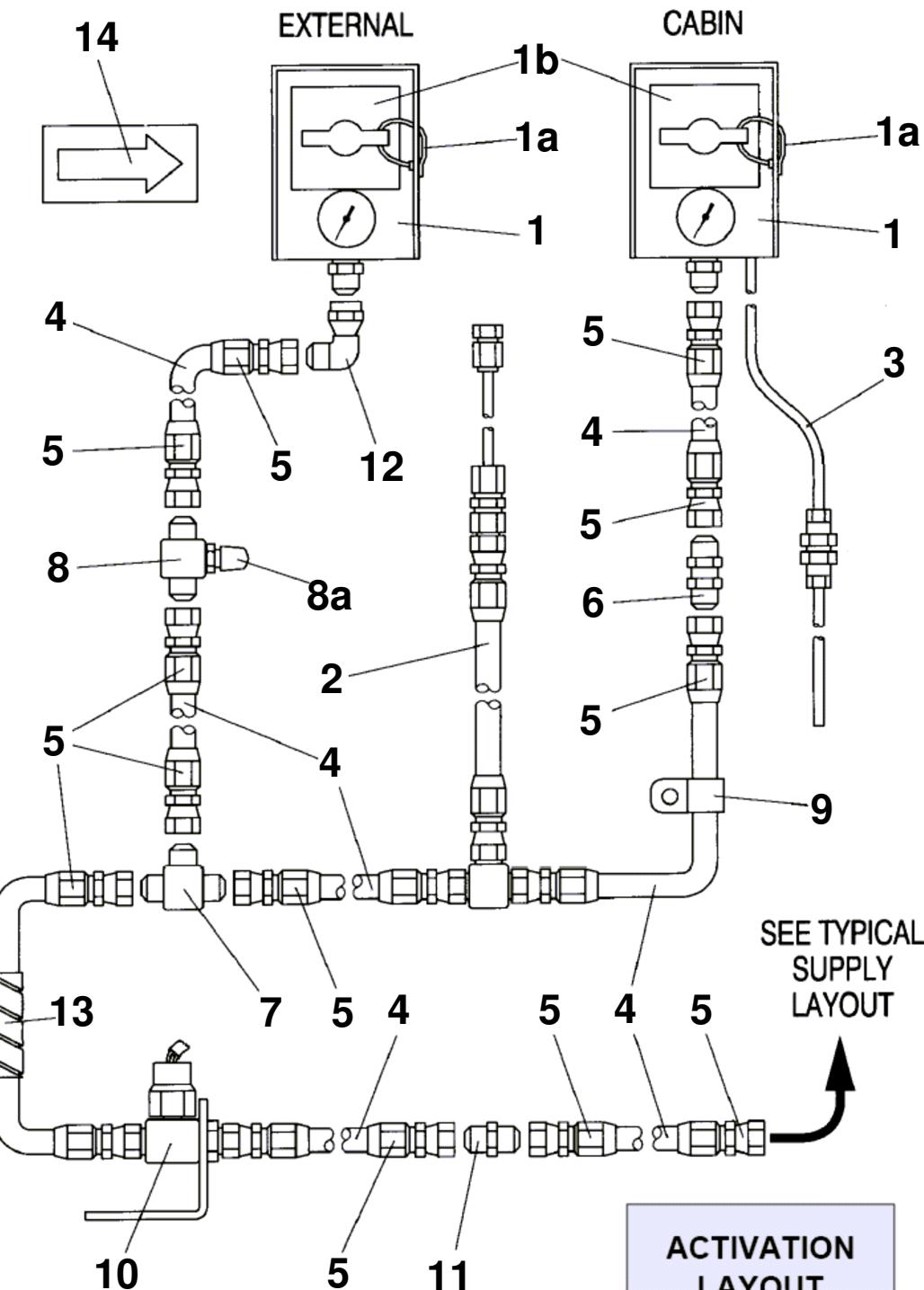
ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-334-805			HEAD ASSEMBLY
1a	69-335-004			CHARGING CONNECTION
1b	69-335-107			DUST CAP - CHARGING VALVE
1c	69-335-234			PRESSURE INDICATOR
1d	69-335-259			DUST CAP – VENT VALVE
1e	69-335-464			SIPHON TUBE O-RING
1f	69-335-029			HEAD O-RING
2	69-334-880-20			TANK ASSEMBLY – 20 Litres
	69-334-880-25			TANK ASSEMBLY – 25 Litres
	69-334-880-45			TANK ASSEMBLY – 45 Litres
	69-334-880-65			TANK ASSEMBLY – 65 Litres
	69-334-880-110			TANK ASSEMBLY – 110 Litres
2a	69-335-551			BUNG 7/8" SAE
2b	69-335-553			BUNG O-RING
2c	69-335-485			CYL. LABEL – 20 Ltr - AFFF
	69-335-486			CYL. LABEL – 25 Ltr - AFFF
	69-335-487			CYL. LABEL – 45 Ltr - AFFF
	69-335-488			CYL. LABEL – 65 Ltr - AFFF
	69-335-489			CYL. LABEL – 110 Ltr – AFFF
2d	69-335-060			WARNING LABEL
2e	69-335-258			FLANGE COVER
3	69-334-835			SIPHON TUBE – 20 Litres
	69-334-845			SIPHON TUBE – 25 Litres
	69-334-855			SIPHON TUBE – 45 Litres
	69-334-865			SIPHON TUBE – 65 Litres
	69-334-875			SIPHON TUBE – 110 Litres
4	69-335-022			MOUNTING BRACKET – 20 & 25 Litres
	69-335-023			MOUNTING BRACKET – 45 Litres
	69-335-024			MOUNTING BRACKET – 65 Litres
	69-335-025			MOUNTING BRACKET – 110 Litres
5	69-335-242			SERVICE TAG
6	69-335-325			RING

NFP1000B

## ACTIVATION LAYOUT

08-24-02

REV.

Sandvik NFP1000 Fire Suppression System

Activation Layout (Typical)

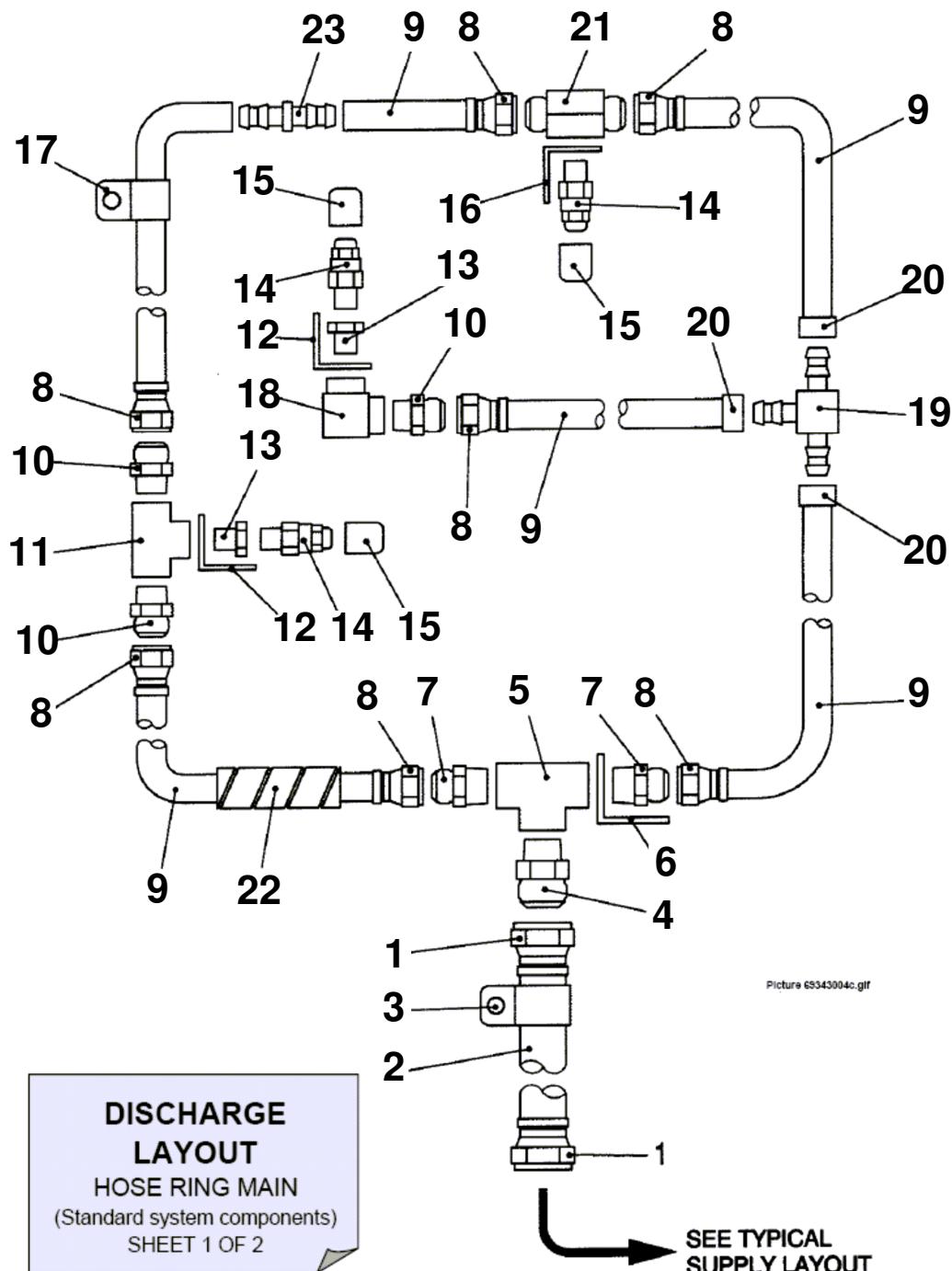
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 08-24-02

Sandvik Underground Mining Flameproof Equipment

**NFP1000B****ACTIVATION LAYOUT****08-24-02****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-334-710			MODULE ASSEMBLY
1a	69-335-001			SAFETY TIE
1b	69-335-319			MODULE LABEL
2	69-344-110			AUTO DETECT ASSEMBLY
2a	69-334-375			TUBE REPLACEMENT KIT
3	69-334-065			VENT LINE EXTENSION
4	69-335-444			HOSE 1/4" (-4) Length as required
5	69-344-150			HOSE END ASSEMBLY -4
6	69-335-007			BULKHEAD FITTING -4
7	69-335-105			TEE MALE -4
8	69-344-160			CHARGING ASSEMBLY
8a	69-335-004			CHARGING CONNECTION
9	69-335-011			HOSE SADDLE -4
10	69-344-175			900kPa PRESSURE SWITCH ASSY ( 12V - 24V )
11	69-335-455			UNION -4 ( Hose Joiner )
12	69-335-294			SWIVEL ELBOW -4
13	69-335-273			SPIRAL HOSE GUARD -4 (Length as required)
14	69-335-320			ARROW LABEL
15	69-335-461			MODULE COVER (Not shown)
NOTE: Standard range systems are supplied with two manual activation modules. One for mounting in the cabin, second for external mounting accessible from ground level.				

**NFP1000C**  
**REV.**
**DISCHARGE LAYOUT (HOSE RING  
MAIN)**
**08-24-03**
Sandvik NFP1000 Fire Suppression System


Discharge Layout

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-24-03**

Sandvik Underground Mining Flameproof Equipment

**DISCHARGE LAYOUT (HOSE RING  
MAIN)****08-24-03****NFP1000C****REV.**

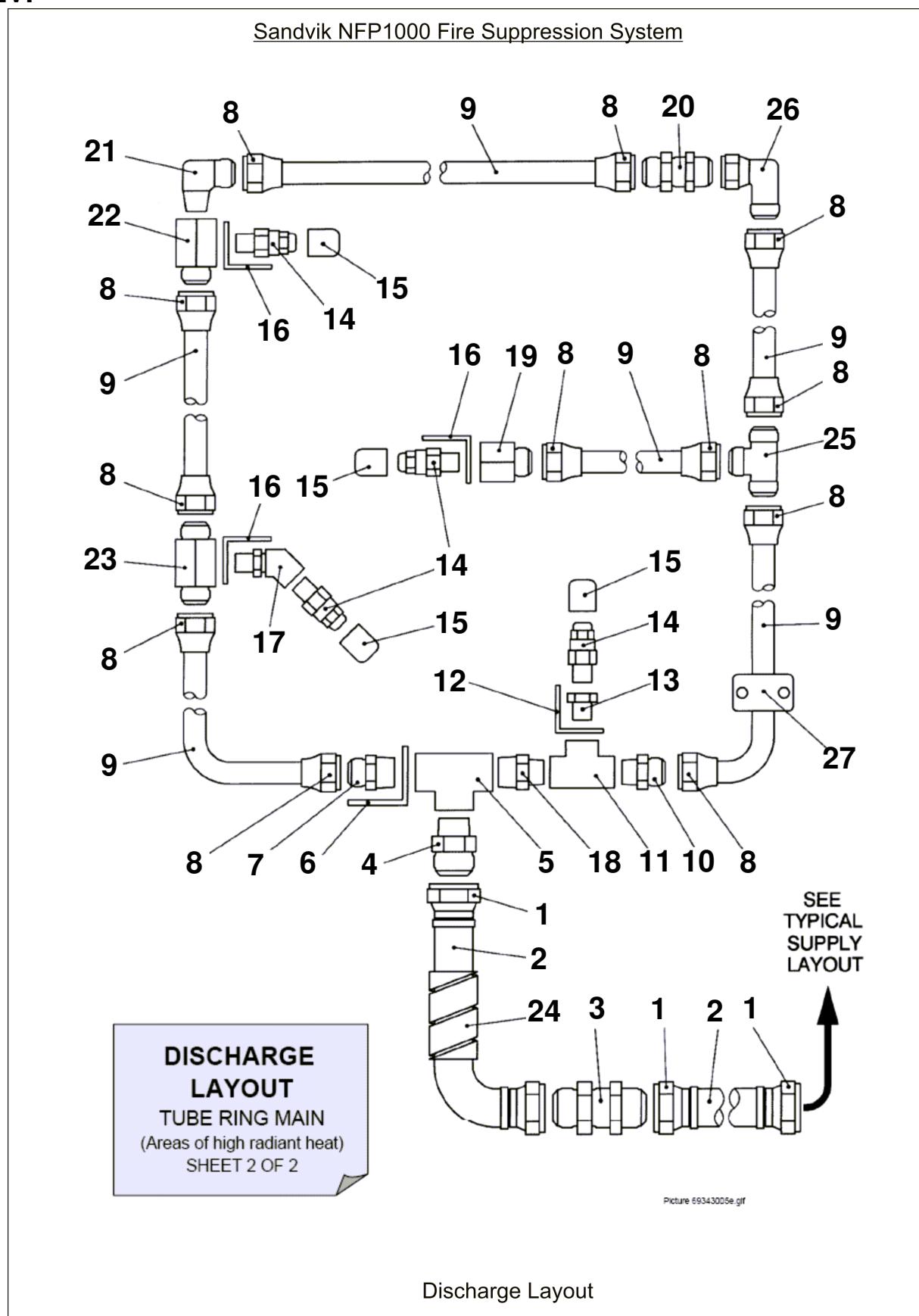
ITEM	PART NO	PAGE	QTY	DESCRIPTION
				** Parts Supplied by SMC Adelaide **
1	69-335-033			HOSE TAIL 3/4", FEMALE SWIVEL -12
2	69-335-034			HOSE 3/4" ( -12 ) Length as required
3	69-335-035			HOSE SADDLE 3/4"
4	69-335-036			NIPPLE 1/2" x -12
5	69-335-037			TEE, FEMALE 1/2"
6	69-335-038			BRACKET ( for 1/2" tee )
7	69-335-039			NIPPLE 1/2" x -8
8	69-335-040			HOSE TAIL 1/2", FEMALE SWIVEL -8
9	69-335-041			HOSE 1/2" ( -8 ) Length as required
10	69-335-042			NIPPLE 3/8" x -8
11	69-335-043			TEE, FEMALE 3/8"
12	69-335-044			BRACKET ( for 3/8" tee )
13	69-335-045			BUSH 3/8" x 1/4"
14	69-334-340			NOZZLE - 60° FULL CONE ( Standard )
	69-334-380			NOZZLE – WIDE ANGLE ( Available on request )
15	69-335-048			DUST CAP ( Standard )
16	69-335-049			NOZZLE BRACKET ( or bracket 69-335-482 )
17	69-335-051			HOSE SADDLE 1/2"
18	69-335-054			ELBOW 90°, FEMALE 3/8"
19	69-335-230			TEE, 1/2" HOSE TAILS – See note below
20	69-335-231			HOSE CLAMP 1/2" ( -8 ) – See note below
21	69-335-057			NOZZLE TEE –8 x –8 x 1/4"
22	69-335-274			SPIRAL HOSE GUARD –8 (length as required)
23	69-335-122			HOSE JOINER 1/2" (-8)  NOTE: Tee and Clamp (items 19 & 20) are no longer used in new systems. Use Union Tee (item 25 shown on page overleaf) and Hose Ends (item 8) instead.

NFP1000D

## DISCHARGE LAYOUT (TUBE RING)

08-24-04

REV.



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 08-24-04

Sandvik Underground Mining Flameproof Equipment



## PARTS MANUAL

NFP1000D

### DISCHARGE LAYOUT (TUBE RING)

08-24-04

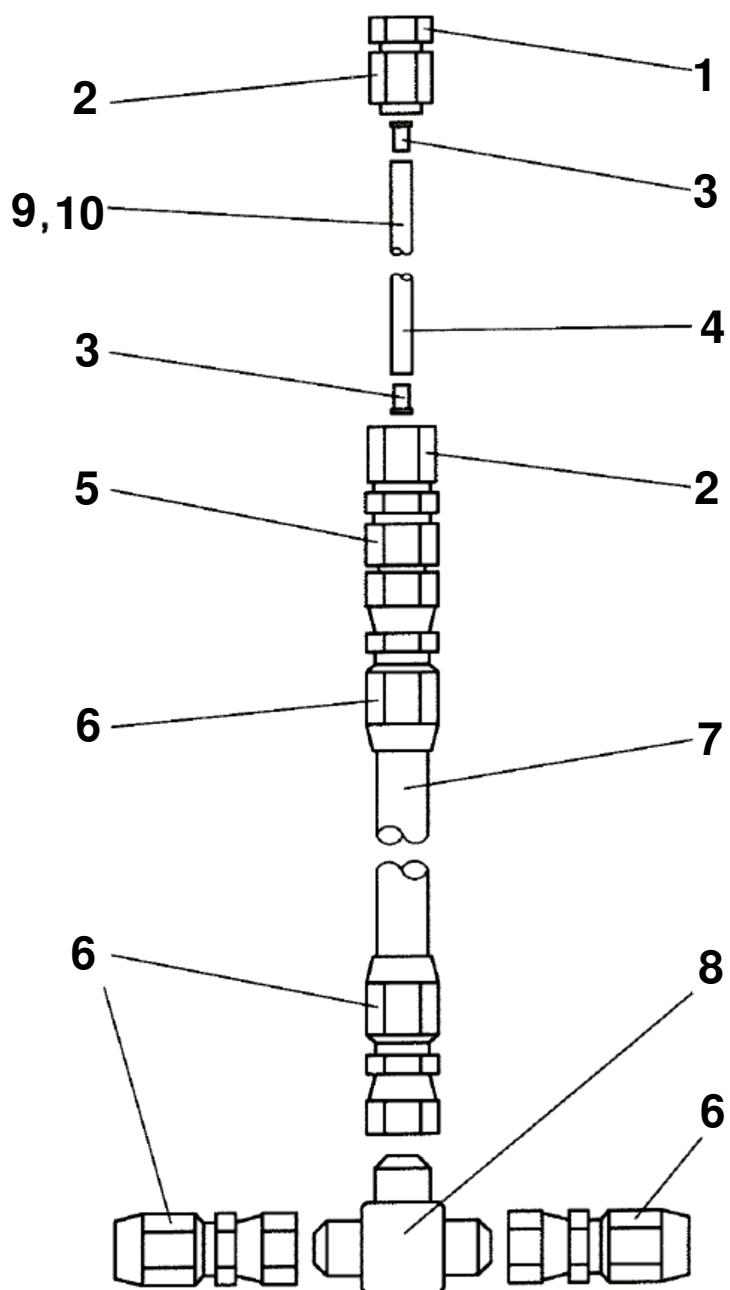
REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-335-033			HOSE TAIL 3/4", FEMALE SWIVEL -12
2	69-335-034			HOSE 3/4" ( -12 ) Length as required
3	69-335-179			BULKHEAD FITTING -12
4	69-335-036			NIPPLE 1/2" x -12
5	69-335-037			TEE, FEMALE 1/2"
6	69-335-038			BRACKET ( for 1/2" tee )
7	69-335-039			NIPPLE 1/2" x -8
8	69-335-266			TUBE NUT 1/2", FLARED, SHORT
9	69-335-268			STAINLESS TUBE 1/2" (Length as required)
10	69-335-042			NIPPLE 3/8" x -8
11	69-335-043			TEE, FEMALE 3/8"
12	69-335-044			BRACKET ( for 3/8" tee )
13	69-335-045			BUSH 3/8" x 1/4"
14	69-334-340			NOZZLE - 60° FULL CONE ( Standard )
	69-334-380			NOZZLE – WIDE ANGLE ( Available on request )
15	69-335-048			DUST CAP ( For nozzles )
16	69-335-049			NOZZLE BRACKET (or bracket 69-335-482)
17	69-335-221			ELBOW 45°, M/F 1/4" BSPP
18	69-335-228			REDUCING NIPPLE 1/2" x 3/8"
19	69-335-052			END LINE USER –8 x 1/4"
20	69-335-180			BULKHEAD FITTING -8
21	69-335-055			ELBOW 90°, MALE –8 x 3/8"
22	69-335-056			NOZZLE TEE –8 x 3/8" x 1/4"
23	69-335-057			NOZZLE TEE –8 x –8 x 1/4"
24	69-335-275			SPIRAL HOSE GUARD –12 (length as reqd)
25	69-335-538			UNION TEE –8
26	69-335-537			SWIVEL ELBOW, M/F -8
27	69-335-260			TUBE CLAMP 1/2", STAUFF
NOTE: Spare Parts Listing shows common components used in current systems. Other parts may be available on request.				

NFP1000E  
REV.

## AUTO DETECT ASSEMBLY

08-24-05

Sandvik NFP1000 Fire Suppression System

Picture M344110.gif

AUTO DETECT ASSEMBLY  
69-344-110

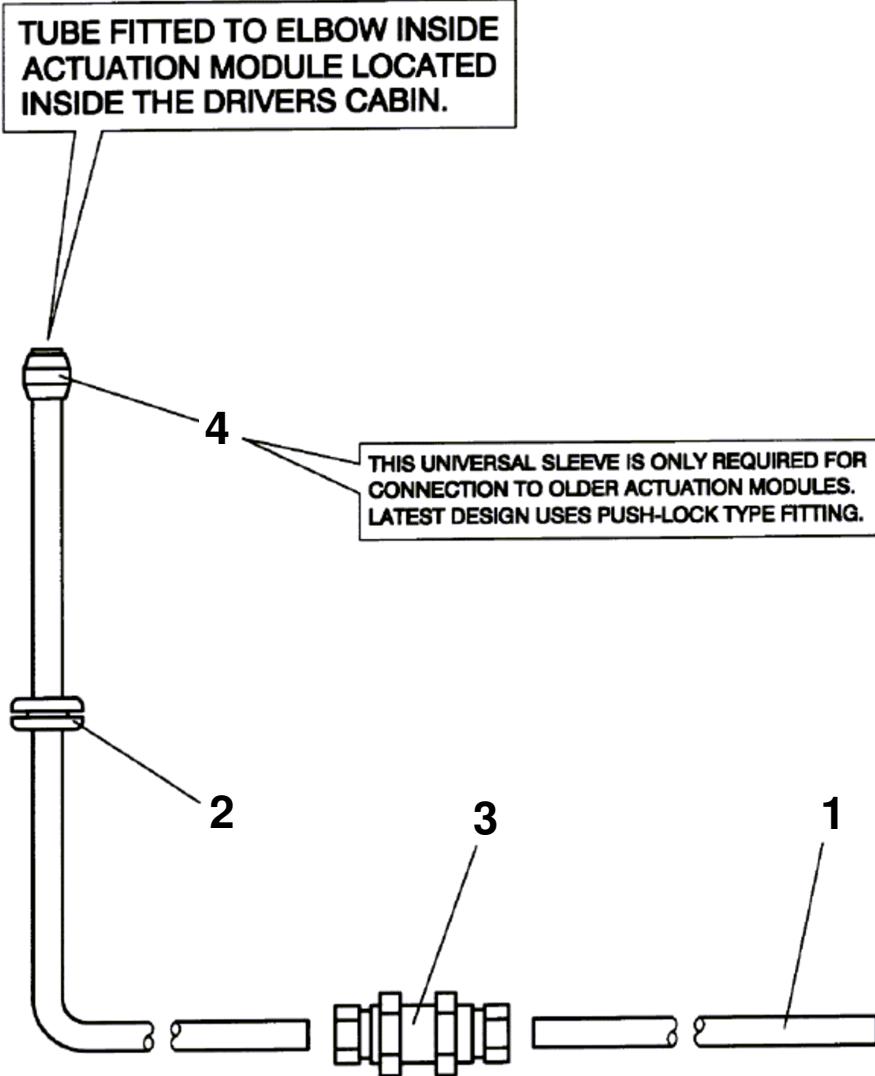
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

SECTION 08-24-05

Sandvik Underground Mining Flameproof Equipment

**NFP1000E****AUTO DETECT ASSEMBLY****08-24-05****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-335-204	1	1	TUBE CAP 1/8"BSP
2	69-335-102	2	2	ADAPTOR 1/4" x 1/8"BSP
2a	69-335-201			Universal sleeve (olive)
3	69-335-133	2	2	Spigot 1/4"
4	69-335-101	5	5	NYLON TUBE 1/4" ( 2000kPa )
5	69-335-127	1	1	ADAPTOR 1/8"BSP FEMALE x -4 MALE
6	69-344-150	4	4	HOSE END ASSEMBLY -4
7	69-335-444	3	3	HOSE -4
8	69-335-105	1	1	TEE, MALE -4
9	69-335-011	10	10	HOSE SADDLE 1/4" ( not shown )
10	69-335-251	10	10	SLEEVE FOR SADDLE ( not shown )
AUTO DETECT REPLACEMENT KIT No. 69-334-375				
REPLACEMENT PARTS REQUIRED FOR 3 YEAR SERVICE				
Contains 1-off each Item 1, 2 and 2a, 2-off Item 3 and 5 metres of Item 4.				

**NFP1000F****VENT LINE EXTENSION****08-24-06****REV.**Sandvik NFP1000 Fire Suppression System**VENT LINE EXTENSION  
69-334-065**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**NFP1000F****VENT LINE EXTENSION****08-24-06****REV.****ITEM PART NO PAGE QTY****DESCRIPTION**

1	69-335-101		** Parts Supplied Separately by SMC Adelaide ** NYLON TUBE 1/4" ( 2000kPa ) 2 METRES
2	69-335-217	1	GROMMET 1/4"
3	69-335-134	1	BULKHEAD UNION 1/4"
4	69-335-201	1	UNIVERSAL SLEEVE (OLIVE),(only used on older activation modules)

**NOTE :**

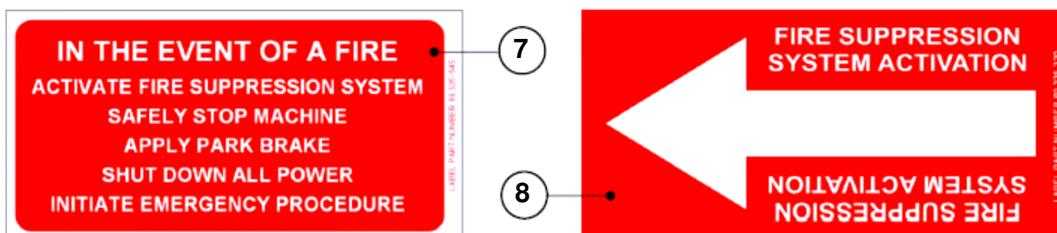
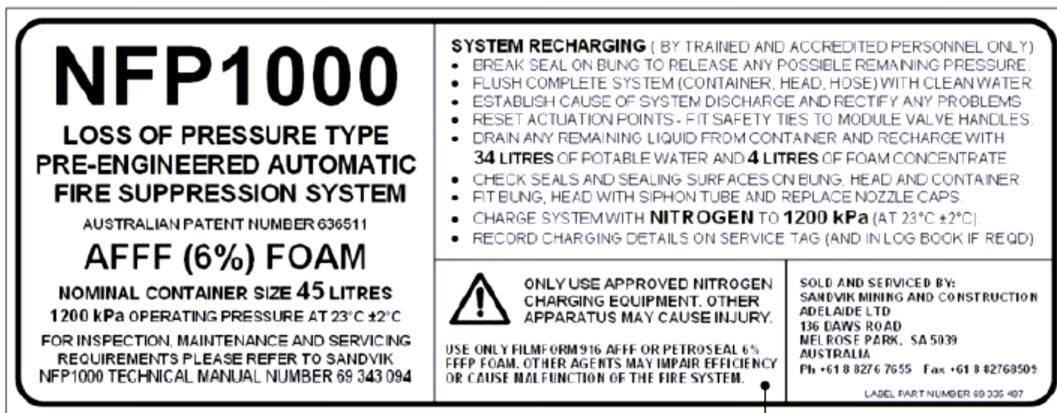
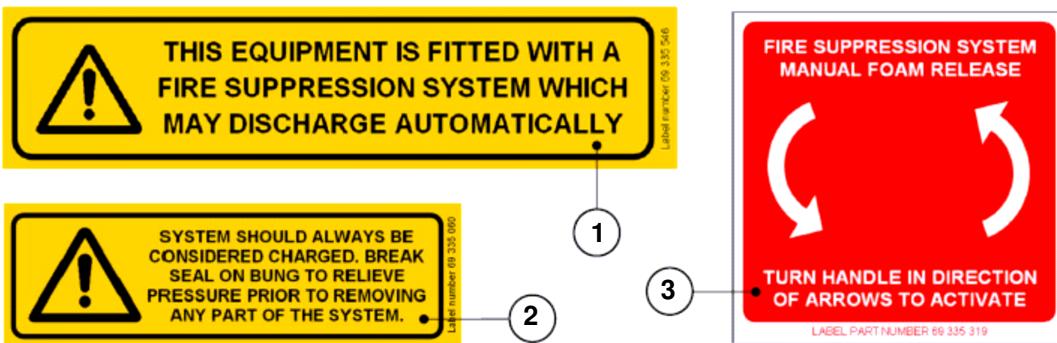
FOR OLD ACTIVATION MODULES THAT HAVE NO SHORT VENT LINE FITTED,  
PLEASE USE VENT LINE ASSEMBLY KIT NUMBER  
69-334-060

NFP1000G

## LABELS

08-24-07

REV.

Sandvik NFP1000 Fire Suppression System

Labels

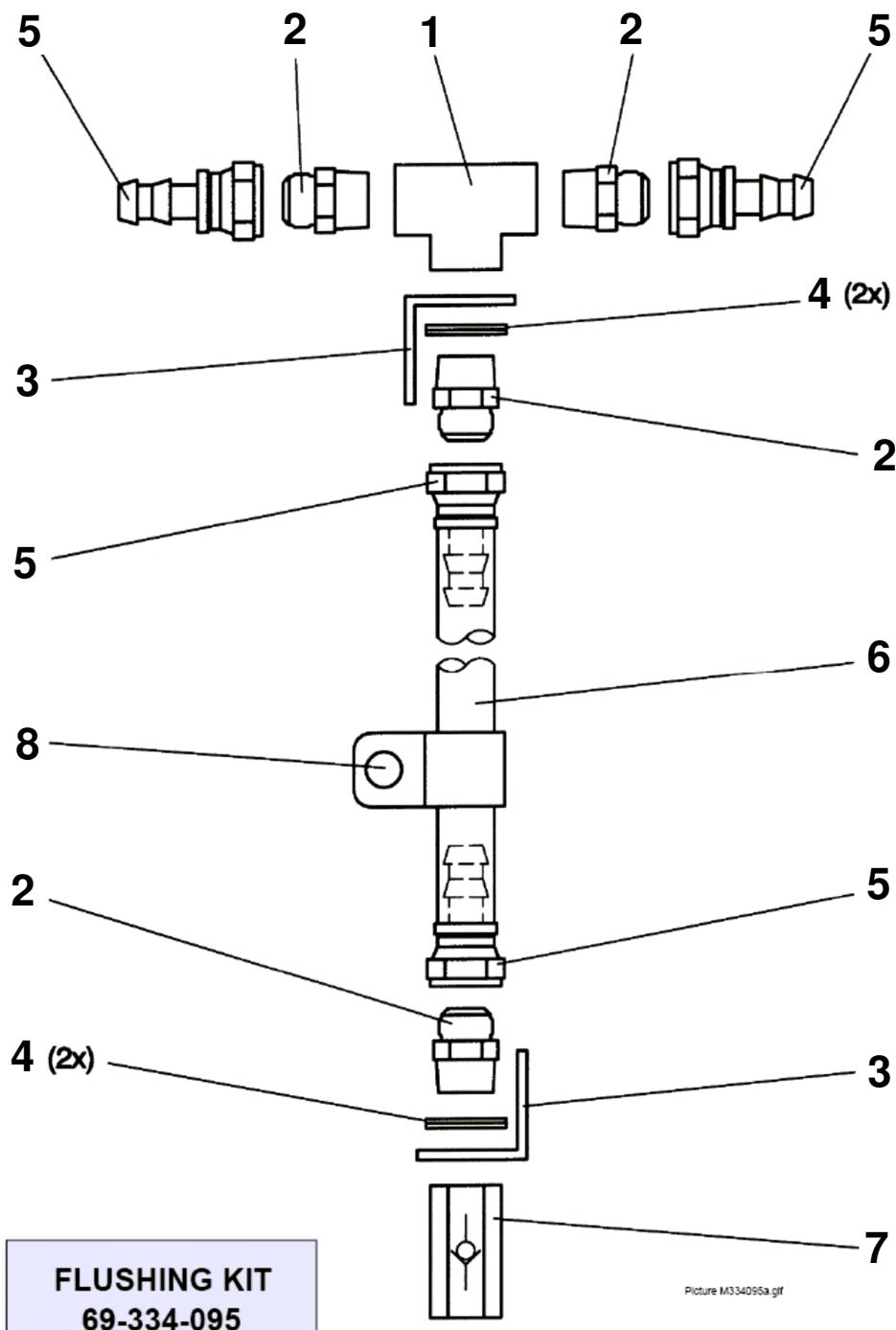
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**NFP1000G****LABELS****08-24-07****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-335-546			LABEL - AUTOMATIC DISCHARGE WARNING
2	69-335-060			LABEL - PRESSURE WARNING
3	69-335-319			LABEL - MANUAL ACTIVATION MODULE
4	69-335-485			LABEL - 20L TANK
	69-335-486			LABEL - 25L TANK
	69-335-487			LABEL - 45L TANK
	69-335-488			LABEL - 65L TANK
	69-335-489			LABEL - 110L TANK
5	69-335-314			LABEL - ENGINE SHUTDOWN
6	69-335-321			LABEL - ENGINE SHUTDOWN WARNING
7	69-335-545			LABEL - FIRE EVENT INSTRUCTION
8	69-335-320			LABEL - MANUAL ACTIVATION LOCATION
9	69-335-534			LABEL - HEAD NUT TORQUE
10	69-335-373			LABEL - AFFF OVER-STICKER (for label item 4 - conversion to AFFF)
11	69-335-492			LABEL - FFFF OVER-STICKER (for label item 4 - conversion to FFFF)

**NFP1000H****FLUSHING KIT****08-24-08**

REV.

Sandvik NFP1000 Fire Suppression System

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS



## PARTS MANUAL

NFP1000H

FLUSHING KIT

08-24-08

REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-335-037	1	1	TEE, FEMALE 1/2"
2	69-335-039	4	4	NIPPLE, 1/2" x -8
3	69-335-038	2	2	BRACKET ( For 1/2" tee )
4	69-335-285	4	4	FLAT WASHER
5	69-335-040	4	4	HOSE TAIL 1/2", FEMALE SWIVEL -8
6	69-335-041			HOSE 1/2" ( -8 ) 3 METRES
7	69-335-061	1	1	CHECK VALVE, FEMALE 1/2"
8	69-335-051	4	4	HOSE SADDLE -8

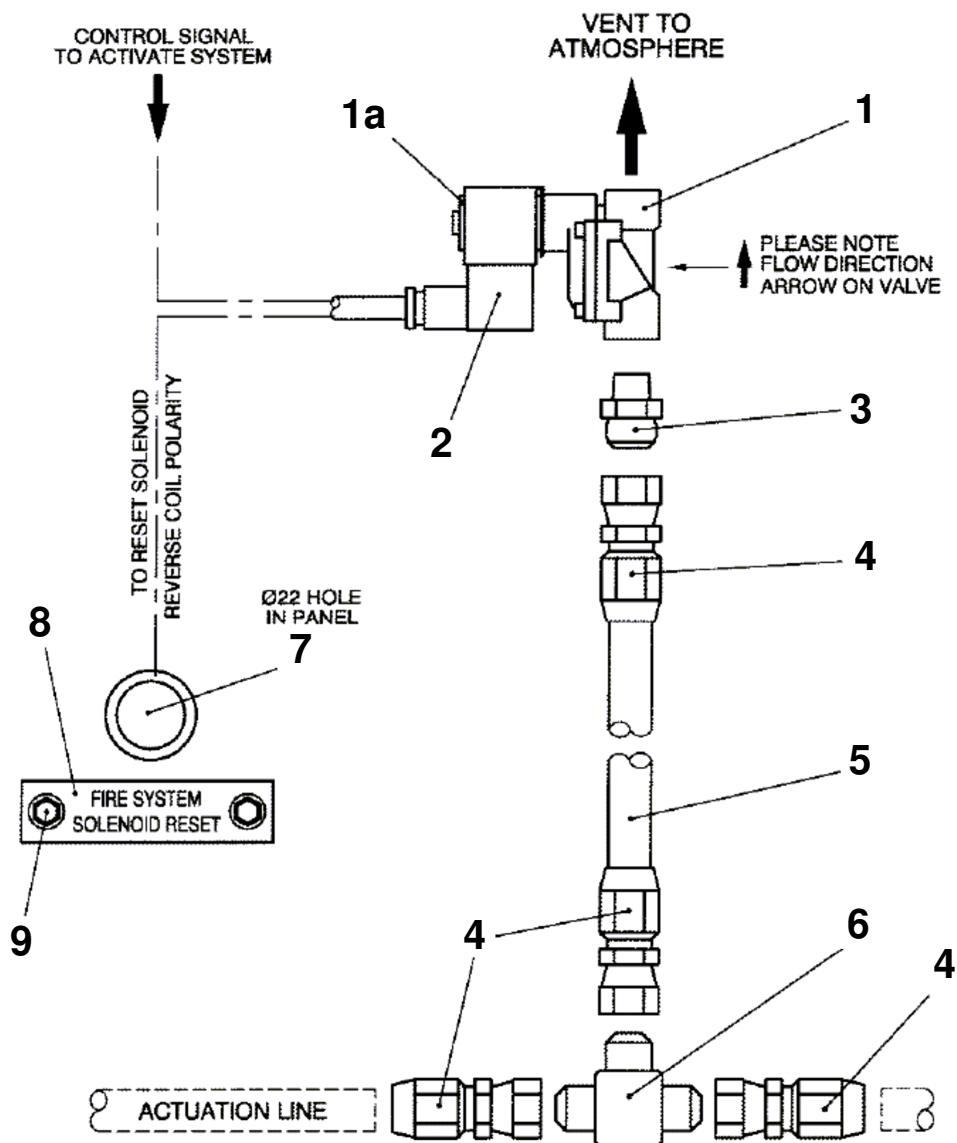
NFP1000I

**SOLENOID ACTIVATION**

08-24-09

REV.

Sandvik NFP1000 Fire Suppression System



PLEASE NOTE: MUST BE FITTED IN CONJUNCTION WITH AN AUTO DETECT TUBE  
TO ENSURE THAT SYSTEM ACTIVATION REMAINS FAILSAFE.

Picture M344320.gif

**SOLENOID ACTIVATION**  
**69-344-320**

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**NFP1000I****SOLENOID ACTIVATION****08-24-09****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-335-501	1	1	SOLENOID LATCHING VALVE 2/2 NC G1/4"
1a	69-335-519			COIL RETAINING CLIP (Part of item 1)
2	69-335-502	1	1	CLICK ON COIL 24V DC
3	69-335-072	1	1	NIPPLE, 1/4" x -4
4	69-344-150	4	1	HOSE END ASSEMBLY -4
5	69-335-444			HOSE 1/4" (-4) 2 METRES
6	69-335-105	1	1	TEE, MALE -4
7	69-335-245	1	1	PUSH BUTTON SWITCH
8	69-335-248	1	1	LABEL – SOLENOID RESET
9	69-335-095	2	2	SELF TAPPING SCREW

NFP1000J

## ENGINE SHUTDOWN KIT

08-24-10

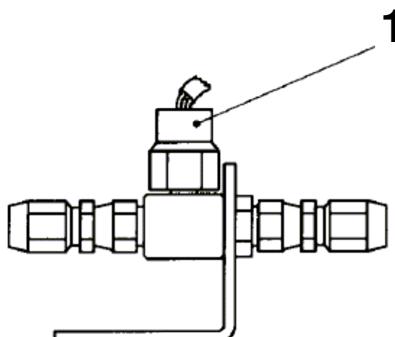
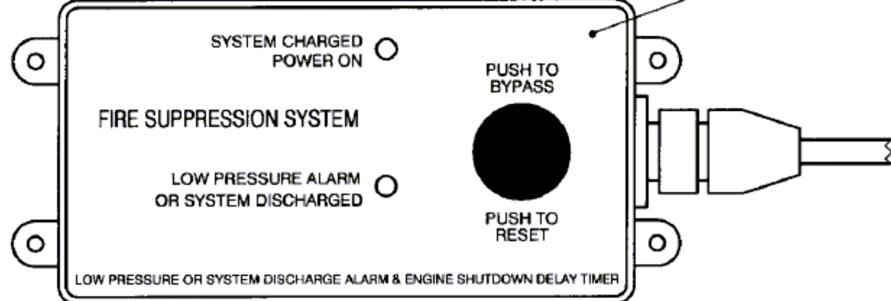
REV.

Sandvik NFP1000 Fire Suppression System

FOR INSTALLATION  
INSTRUCTIONS  
REFER TO LABEL  
ATTACHED TO THE  
BACK OF THE  
TIMER/ALARM BOX.

EQUIPMENT FIRE SUPPRESSION SYSTEM IS  
INTEGRATED WITH ENGINE MANAGEMENT  
THE EQUIPMENT ENGINE WILL  
SHUT DOWN AUTOMATICALLY  
6 SECONDS AFTER THE FIRE  
SYSTEM HAS BEEN ACTIVATED

3



Various brands of switches are supplied.  
Pictorial presentation may not be switch used.

THIS EQUIPMENT IS PROTECTED BY  
SANDVIK FIRE SUPPRESSION SYSTEM.  
THE FIRE SYSTEM USES AN INTEGRATED  
AUTOMATIC ENGINE SHUTDOWN CIRCUIT.  
IF EQUIPMENT FAILS TO START OR RUN,  
CHECK FIRE SYSTEM PRESSURE GAUGE.  
SYSTEM PRESSURE MUST EXCEED 900 kPa  
OR SAFETY CIRCUIT WILL STOP ENGINE.

1a

Picture M344130d.jpg

**ENGINE SHUTDOWN KIT**  
WITH ALARM, TIMER & OVERRIDE FUNCTION  
**69-344-130**

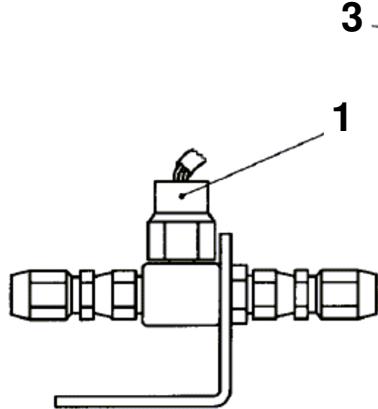
PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**NFP1000J****ENGINE SHUTDOWN KIT****08-24-10****REV.**

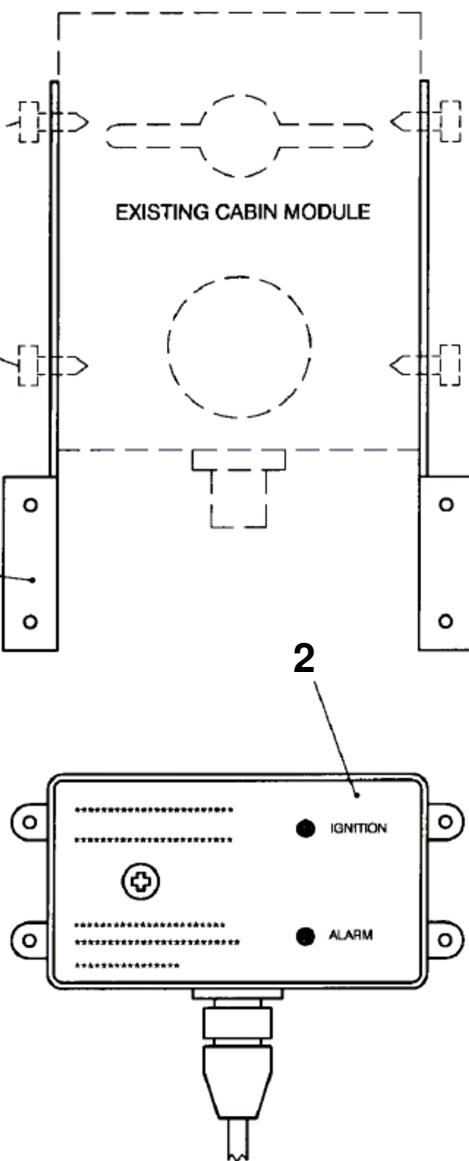
ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-344-175	1	1	PRESSURE SWITCH ASSY
1a	69-335-314			NOTIFICATION LABEL
2	69-335-311	1	1	ALARM & ENGINE SHUTDOWN TIMER
2a	69-335-539			FUSE, 5AMP (Part of assembly item 2)
3	69-335-321	1	1	NOTIFICATION LABEL

**NFP1000K****ALARM ONLY KIT****08-24-11****REV.**Sandvik NFP1000 Fire Suppression System

USE EXISTING SCREWS ON  
SIDE OF CABIN MODULE  
FOR ATTACHING THE ALARM  
BRACKET TO CABIN MODULE.



Pictorial presentation may not be switch used.



**ALARM ONLY KIT**  
AUDIO-VISUAL - SELF-MONITORING  
**69-344-420**

Picture M344420.gif

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS



## PARTS MANUAL

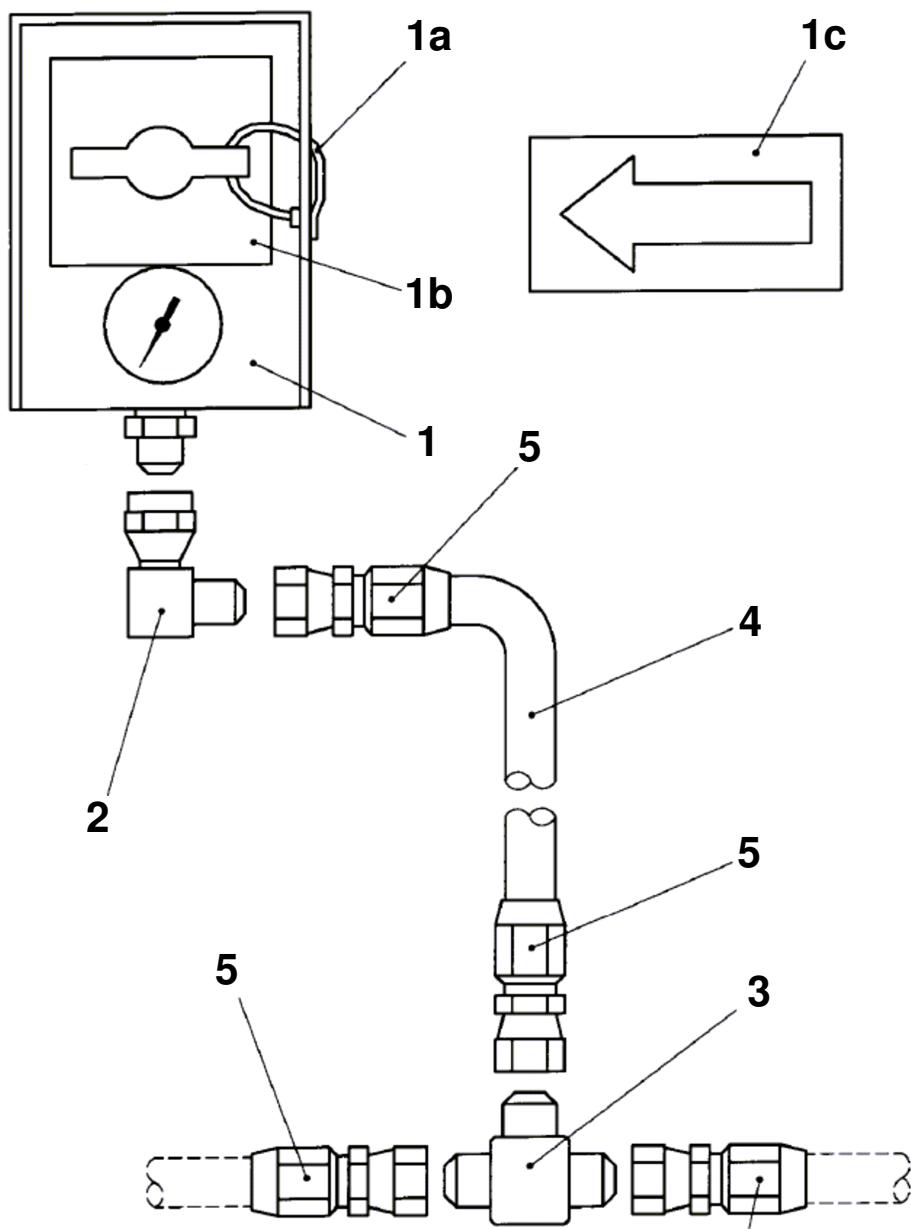
NFP1000K

ALARM ONLY KIT

08-24-11

REV.

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-344-175	1	1	PRESSURE SWITCH ASSY
2	69-335-527	1	1	AUDIO-VISUAL ALARM
3	69-335-540	1	1	MOUNTING BRACKET (Set of 2)

**NFP1000L****MODULE KIT****08-24-12****REV.**Sandvik NFP1000 Fire Suppression System**MODULE KIT  
69-344-140**

Picture M344140.gif

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**SECTION 08-24-12**

Sandvik Underground Mining Flameproof Equipment

**NFP1000L****MODULE KIT****08-24-12****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-334-710	1	1	MODULE ASSEMBLY
1a	69-335-001			SAFETY TIE (Part of Item 1)
1b	69-335-319			MODULE LABEL (Part of Item 1)
1c	69-335-320			ARROW LABEL (Part of Item 1)
2	69-335-294	1	1	SWIVEL ELBOW -4
3	69-335-105	1	1	TEE, MALE -4
4	69-335-444			HOSE -4 (3 METRES)
5	69-344-150	4	4	HOSE END ASSEMBLY -4

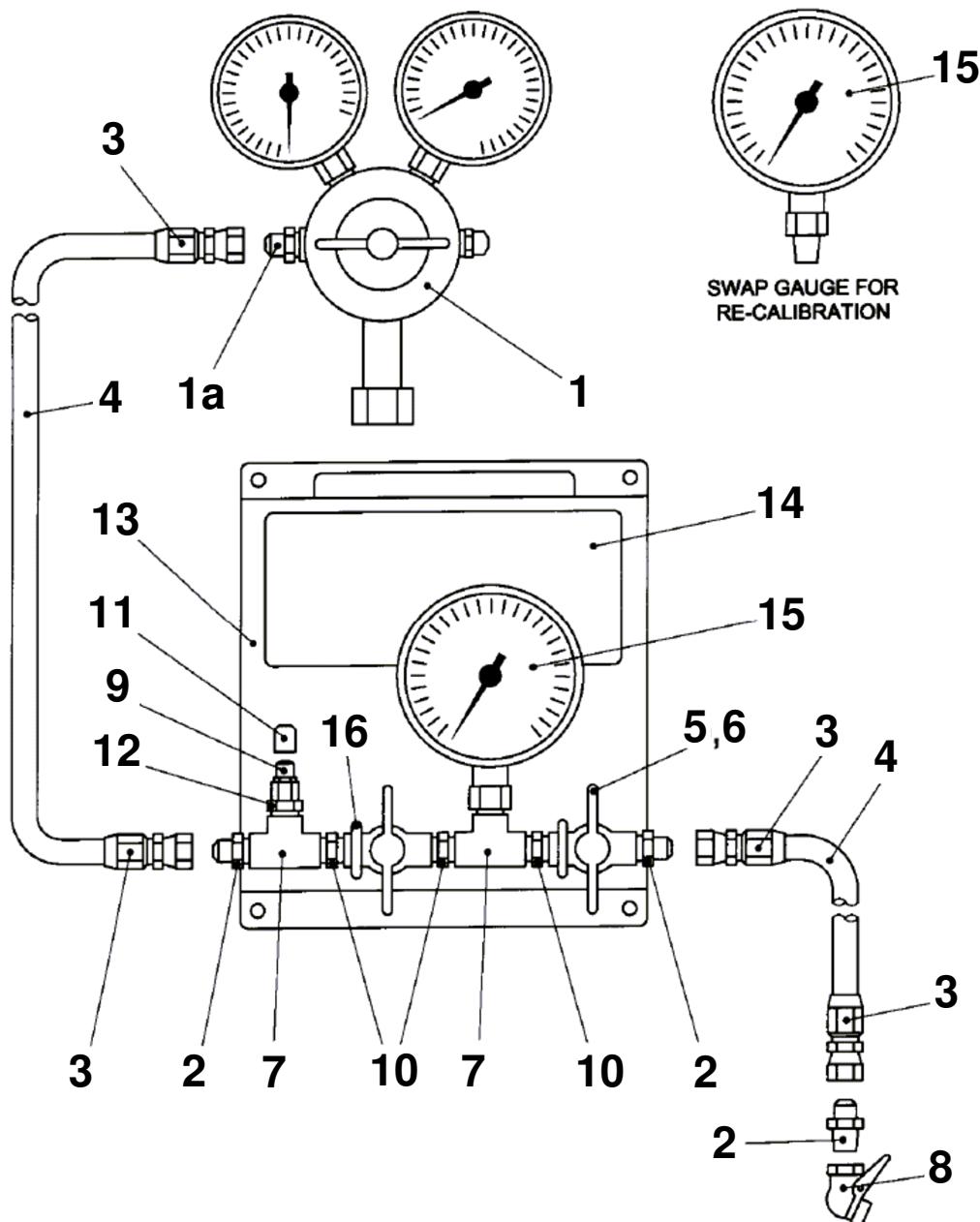
NFP1000M

## CHARGING RIG

08-24-13

REV.

Sandvik NFP1000 Fire Suppression System



CHARGING RIG  
69-334-080

Picture M334080d.gif

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**NFP1000M****CHARGING RIG****08-24-13****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-335-071		1	INERT GAS REGULATOR
1a	69-335-072			NIPPLE, 1/4" x -4
2	69-335-072		3	NIPPLE, 1/4" x -4
3	69-344-150		6	HOSE END ASSEMBLY -4
4	69-335-444			HOSE, 1/4" (-4) – see note below 7.5 METRES
5	69-335-203		2	BALL VALVE (no handle)
6	69-335-186		2	HANDLE, WIDE, YELLOW
7	69-335-263		2	TEE, 1/4" BSP, No.35E
8	69-335-073		1	GAS COUPLING
9	69-335-074		1	VENT VALVE
10	69-335-213		3	NIPPLE, 1/4" BSP
11	69-335-259		1	DUST CAP
12	69-335-257		1	BUSH, 1/4"x 1/8" BSP, REDUCING
13	69-335-496		1	PLATE
14	69-335-497		1	LABEL, OPERATIGN INSTRUCTIONS
15	69-335-498		2	GAUGE, CALIBRATED
16	69-335-499		2	U-BOLT
17	69-335-500		1	CARRY CASE (not shown)
NOTE – 3 hose assemblies are supplied (1m, 1.5m and 5m), ie 7.5 metres total.				

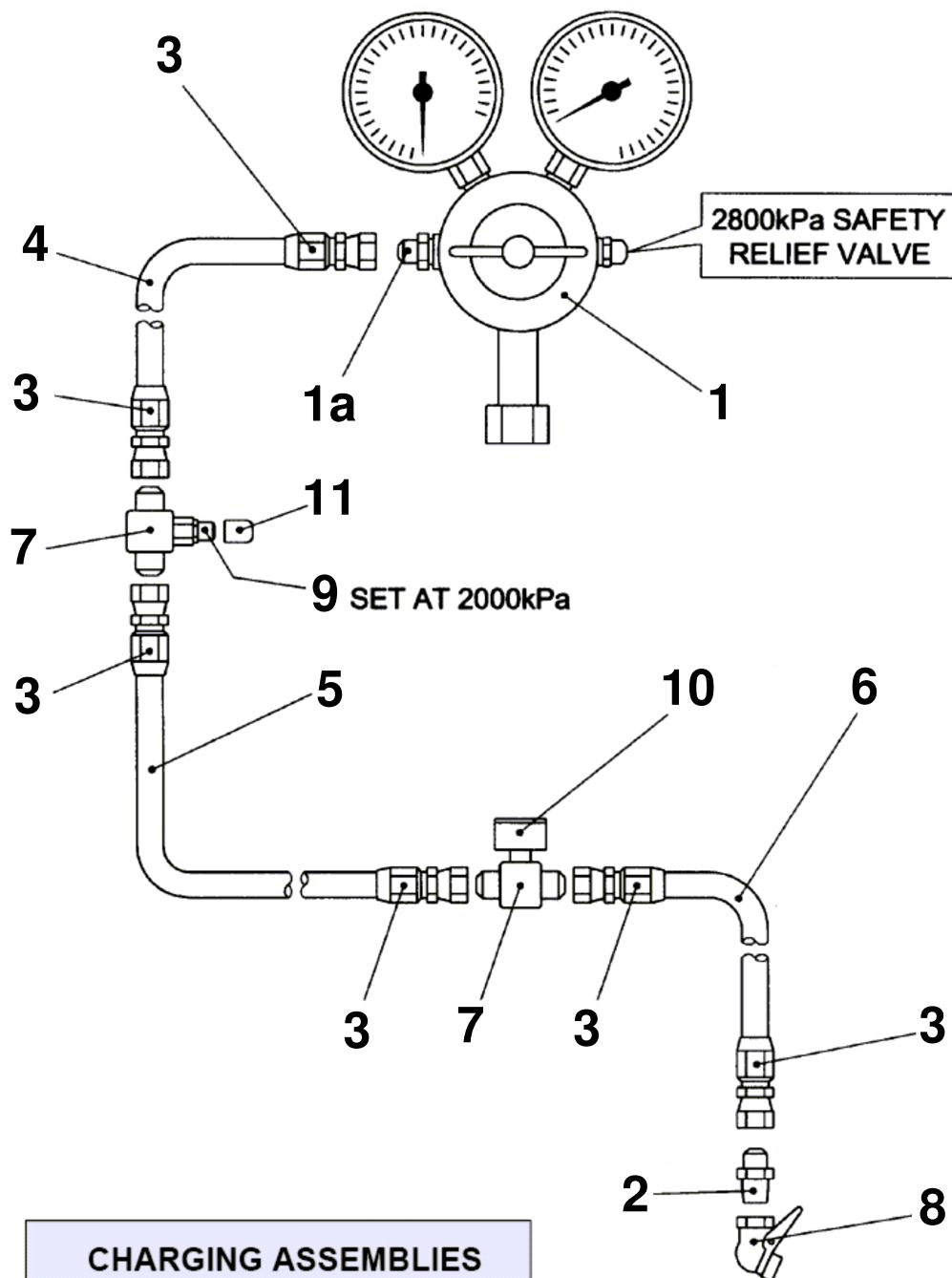
NFP1000N

## CHARGING ASSEMBLY

08-24-14

REV.

Sandvik NFP1000 Fire Suppression System

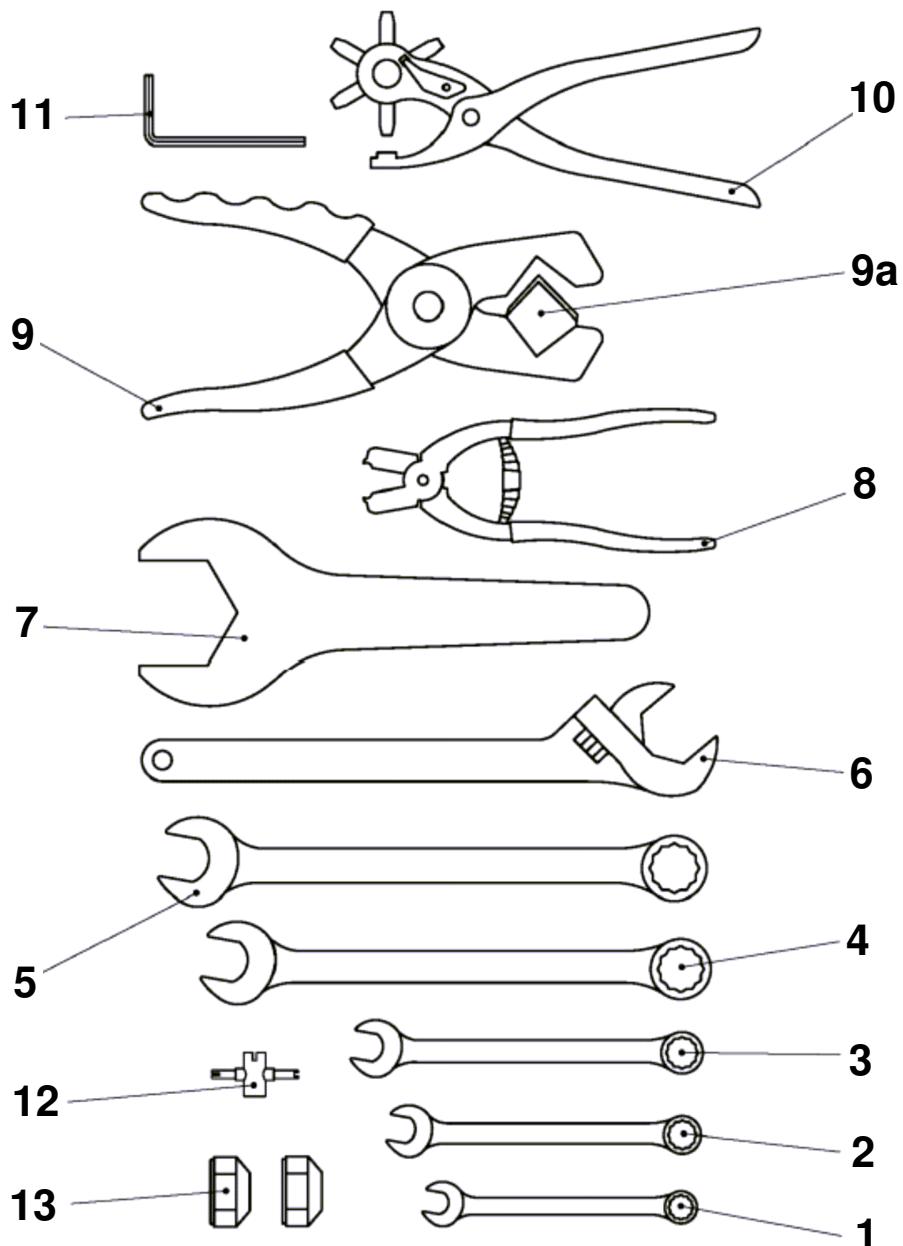


Picture M344180a.tif

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**NFP1000N****CHARGING ASSEMBLY****08-24-14****REV.**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-335-071		1	INERT GAS REGULATOR
1a	69-335-072		1	NIPPLE, 1/4" x -4
2	69-335-072		1	NIPPLE, 1/4" x -4
3	69-344-150		6	HOSE END ASSEMBLY -4
4	69-335-444			HOSE, 1/4" (-4) – see note below 0.25m
5	69-335-444			HOSE, 1/4" (-4) – see note below 4.5m
6	69-335-444			HOSE, 1/4" (-4) – see note below 0.25m
7	69-335-447		2	TEE, -4 MALE x 1/8"BSP FEMALE
8	69-335-073		1	GAS COUPLING
9	69-335-074		1	VENT VALVE
10	69-335-234		1	PRESSURE INDICATOR
11	69-335-259		1	DUST CAP
NOTE – A total of 5 metres of hose is supplied.				

**NFP1000O****SERVICE KIT****08-24-15****REV.**Sandvik NFP1000 Fire Suppression System

**SERVICE AND ASSEMBLY  
TOOL KIT No. 69-334-110**

Picture M344110e.jpg

PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**PARTS MANUAL****NFP1000O****SERVICE KIT****08-24-15****REV.**

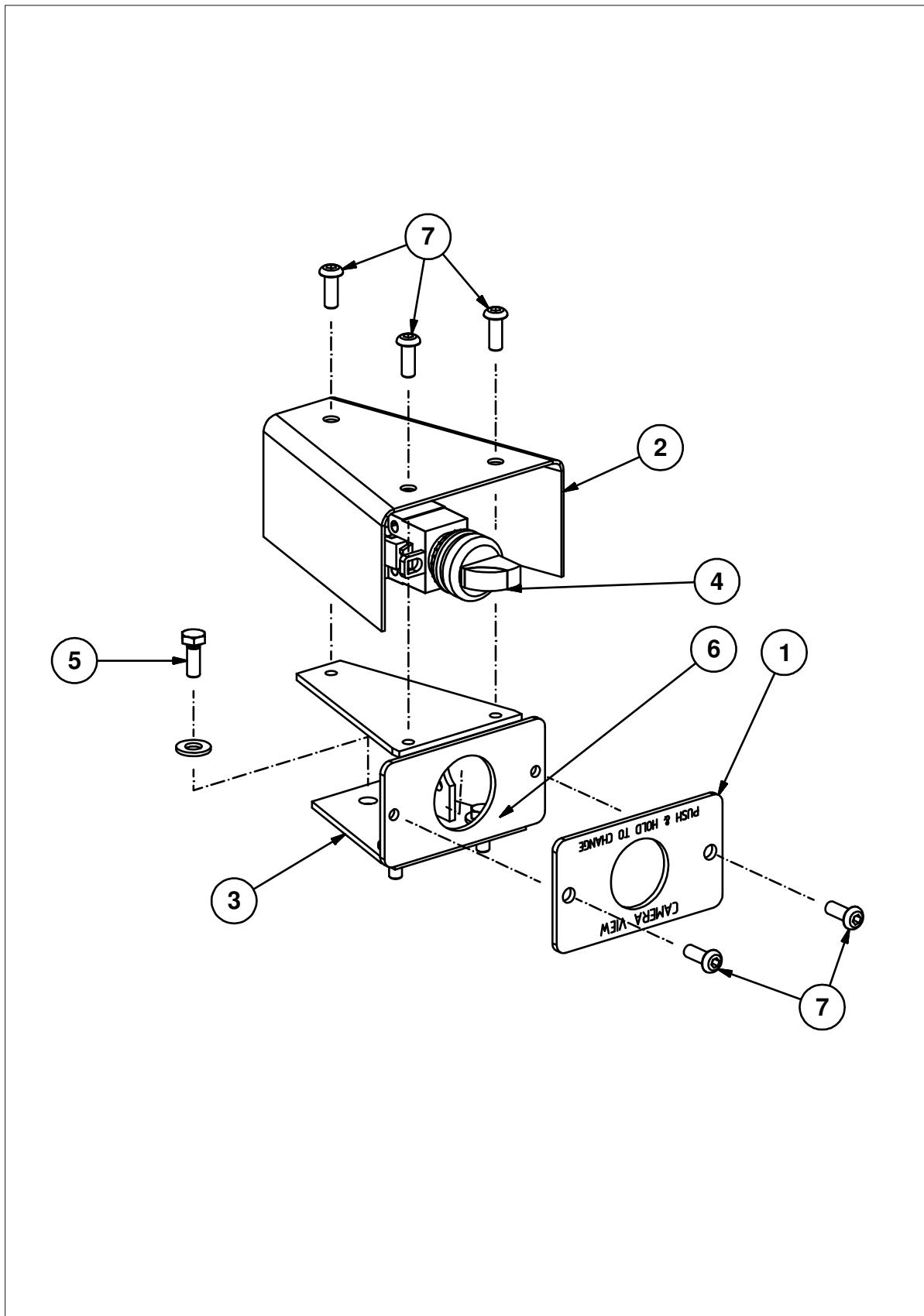
ITEM	PART NO	PAGE	QTY	DESCRIPTION
** Parts Supplied Separately by SMC Adelaide **				
1	69-335-065	1	1	OPEN END RING SPANNER – 7/16"AF
2	69-335-066	1	1	OPEN END RING SPANNER – 1/2"AF
3	69-335-067	1	1	OPEN END RING SPANNER – 9/16"AF
4	69-335-068	1	1	OPEN END RING SPANNER – 13/16"AF
5	69-335-069	1	1	OPEN END RING SPANNER – 7/8"AF
6	69-335-070	1	1	ADJUSTABLE WRENCH – 300mm
7	69-335-062	1	1	HEAD NUT SPANNER
8	69-335-137	1	1	CRIMPING PLIERS
9	69-335-531	1	1	HOSE CUTTERS
9a	69-335-532			BLADE ( Replacement for item 9 )
10	69-335-350	1	1	NUMERICAL PUNCH
11	69-335-458	1	1	KEY ( For tamperproof screws )
12	69-335-315	1	1	VALVE REPAIR TOOL
13	69-335-556	2	1	CAP, -12 (For head discharge line nipple)

BD00019940

**CAMERA SWITCH GROUP**

08-33-18

REV. 0



PLEASE QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

**BD00019940****CAMERA SWITCH GROUP****08-33-18****REV. 0**

ITEM	PART NO	PAGE	QTY	DESCRIPTION
1	A2U900-471144	1	1	DECAL, CAMERA VIEW
2	A2U900-790184	1	1	COVER
3	A2U900-791176	1	1	Bracket, Switch
4	BD00019471	1	1	IS Rotary Selector Switch
5	445502656	3	3	Bolt Hex Head, M6 x 16mm Long
6	450062504	3	3	Washer, Flat, 6 mm
7	A2U900-392191	5	5	Hex Soc Pan Head Screw, M6 x 1 x 16mm Long